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## Editorial

This issue gets uploaded at a time of festive season. Let me wish our readers a Happy 2005. Unfortunately our joy has been diminished by the fact that many countries in South East Asia have been struck by a great calamity in which nearly 150,000 lives have been lost. We hope that the IT for Development community will contribute generously to the rehabilitation effort for millions who have suffered loss of life and property.

There is a debate raging amongst the scientific community as to whether countries like India and Sri Lanka, where it took three hours for the Tsunami to reach, could have minimized the loss of life with an early warning system. In this age of unprecedented progress in Information and Communication Technologies, it is a shame that the International community has been unable to share information speedily on impending disasters; countries are unable to communicate with vulnerable citizens to warn them of such disaster and relief is hampered because of lack of communication. This is not a failure of adequate scientific knowledge. It is a failure of policies in the affected countries to utilize the knowledge for the benefit of the people. It is also a failure of International cooperation that there are no warning systems that are global in nature and run on a non-commercial basis. Nature's fury knows no geographical boundaries and it can strike any country. Moreover, with high international mobility, a disaster can affect people from many different countries, as has happened in the case of over 3,500 Swedish tourists missing from Thailand after the recent disaster. Shouldn't there be cooperation amongst the International community to build warning systems that are global, serving all countries- whether rich or poor?



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## Building Transparency, Fighting Corruption with ICTs



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Governments have a nasty tendency to act in their own interests. They make decisions that suit a small political clique, not the majority. They take actions that line the pockets of the public servant, at the expense of the citizen.

Transparency is one way to address this: opening up those decisions and actions to public scrutiny; pressurising public servants to serve the common good not their personal ends.

Can ICTs play a role here? Can they make public servants more accountable and less corrupt? To address these questions, the eGovernment for Development Information Exchange has recently run a knowledge-building exercise on "e-transparency".

Participants supplied a set of case studies ranging from the hopeful to the hopeless.

In Cameroon, for example, the 'Aquarium' project provides government employees with direct, online access to progress details about personnel procedures in which they are involved: promotion, training selection, retirement, etc. Personnel managers can access the same data. If a personnel clerk now tries to delay a procedure in hope of extracting a bribe, that delay is easily detected. By making government procedures more transparent, and by reducing the need for interactions between clerks and clients, efficiency has increased and opportunities for corruption have decreased.

ICTs have a particular value through two of their capacities. By *disintermediating*, ICTs are cutting gatekeepers and, hence, cutting bribery out of the picture. For example, businesses which can find bid and tender details on the Web no longer need bribe an intermediary to get that information. By *automating* a public sector process, ICTs remove it from fallible, corruptible human intervention. Businesses dealing with automated auction e-procurement sites no longer need pay a kickback to get their bid selected.

But ICTs are no magic bullet to cure sub-standard behaviour in government. Too many e-transparency projects resemble the cliché of "putting lipstick on the face of a pig": a gloss of technology that leaves untouched the underlying, systemic causes of corruption and self-serving behaviour.

In Indonesia, a new e-tendering system for infrastructural development has been largely unsuccessful. Junior bureaucrats must pay legislative officials to get infrastructure contracts approved. Those same bureaucrats must then demand kickbacks from contractors to recoup their earlier payments. No amount of ICTs can stop that systemic need.

In India, the eCOPS project cost around US \$ 3m. It was intended to make registration of criminal cases more open, and less corrupt. But the system is virtually unused. The public don't trust the police, and ICTs aren't changing that. Likewise, the police service suffers from endemic politicisation and corruption, and ICTs aren't changing that.



***The automatic fingerprints identification system has greatly enhanced the quality and speed of investigation\****

ICTs can change government processes at the margins but – alone – they have little impact on the political systems and institutions that shape the public sector. Indeed, there are signs of senior officials deliberately using ICTs to spotlight the corruption of junior staff in order to throw their own wrongdoings further into shadow.

The lessons are that ICTs will only work for good governance where they form part of a strong coalition of interests: of technology and stakeholders working together. This has only happened where stakeholders with strong leverage on government – donors using the power of aid money; voters using the power of the ballot box – harness ICTs to their agenda.

Even then, the micro-level elements must be right. eTransparency projects must be small, but allow for incremental growth. Project managers must understand and play the political game. Methods must be used to neutralise or bypass the resistance of corrupt staff who stand to lose out. Only with all this in place can we hope to see ICTs make any real contribution to the agendas of building transparency and fighting corruption in government.

Further materials on “e-transparency” in government (including case studies, models, best practice guidelines, and training materials) can be found at:

<http://www.e-devexchange.org/eGov/topic2.htm>

The “eGovernment for Development Information Exchange” project is coordinated by the University of Manchester’s [Institute for Development Policy and Management](#). The project was funded and managed by the [Commonwealth Telecommunications Organisation](#) as part of the UK [Department for International Development](#)’s “Building Digital Opportunities” programme.

\* Photographs compiled by the Editorial Team. Source: <http://www.ap-it.com/ecops.html>

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## Cyber-Laws and Enforcement<sup>1</sup>

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### Importance of trust and security on cyber-space

Information and communication technologies (ICTs) today have impacts on virtually every aspect of society and every corner of the world in information or digital age fostering commerce, improving education and health care, and facilitating communications among all stakeholders. The more cases of cyber-crimes over the ICTs especially through the fastest growing medium like Internet, the more voices for regulating them in whatever forms. Some countries, thus, began to accommodate such voices or demands through revising the existing laws and

/ or issuing new legislation(s) – or ‘cyber-laws’ to deal with new issues on ICTs.

The term or scope of ‘cyber-laws’ is yet unclear in many countries although it can be interpreted at large in two: One is for the relevant legislations dealing with or regulating converged computer, telecommunications and multimedia or broadcasting in such cases as the Multimedia and Communications Act, Malaysia; the other is for those tackling the emerging cyber-crimes in such cases as the Information Technology Act in India and the Convention of Cyber-crimes adopted by the Council of Europe. The term of cyber-laws or legislations referred to in this paper will be limited to the latter.

In the global information society – beyond national jurisdictions, an escalating national *de jure* regulation meets a similarly pervasive *de facto* futility of enforcement. National legislatures might continue to enact regulations especially over criminal matters, but their regulatory endeavors are unlikely to be effectively enforceable, as they desire due to the global nature of ICTs. Global phenomena like cyber-crimes should in principle propel nations to achieve legislative co-operation and partnership at international levels, since cyber-space is no respecter of national boundaries. The nature and extent of the problem in enforcing the laws over the cyberspace is enormous. Some law enforcement agencies are responding aggressively, others are not fully aware of the problem on the cyberspace and lack the expertise and resources to pursue the kind of cases appearing everyday. Some ISPs have taken affirmative actions to crackdown on cyber offenders, whilst others have not. There is a great deal more that government and/or industry can and should do to empower individuals to protect themselves against cyber offenders and other online threats.

### The main scope and development of cyber-laws

The existing legislations and statutes need to be reviewed to determine whether they can address the issues arising out of the new ICT era. If the current laws are inadequate to deal with the problems, national governments and / or appropriate regional and international bodies need to either revise the existing laws or enact new laws to provide individual, corporate and government users with maximum trust and security, as Table 1 articulates a few examples.

### Enforcement mechanisms

To optimize benefits of ICTs and secure confidence of users, information society should be safe and secured through not only cyber-laws *per se* but also appropriate enforcement mechanisms. However, first of all, many countries do not have specific **enforcement agencies** to combat various cyber-crimes.

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<sup>1</sup> This is an abridged version of the paper prepared for TELCOM Asia 2004 held in Busan, Republic of Korea. Through this article, the author intends to raise awareness of growing cyber-crimes and eventually prevent or solve them.

**Table 1: Scope and Development of ICT Legislations**

Issues	Laws	National Actions	International Actions
Contracts	Electronic Transaction Act	Hong Kong/China, Singapore, Thailand etc.	UNCITRAL: Model Law
Harmful sites or contents	Penal Law or Legislation,  Obscenity Law, Communication Decency Act, Obscene Publication Act, Self-regulation etc.	Australia, China, HK/China, India, Japan, Malaysia, New Zealand, Philippines, Singapore etc.  Hong Kong/China, USA, UK, EU etc.	N.A.
Hacking & virus	E-Commerce Act	Philippine	N.A.
Intellectual Property Right (IPR)	Copyright Law, Patents Law, Trade Marks Law, IPR Law, Green Paper on Counterfeiting & Piracy etc.	Hong Kong/China, S.Korea, Singapore, India, EU etc.	WIPO: Ratification
Data protection & privacy	Personal Data Law Privacy Law, Directive, Self-regulation etc.	Hong Kong/China, S.Korea, EU(e.g.,D95/46/EC) <sup>2</sup> USA etc.	OECD: Guidelines on Trans-border Data Barriers & The Protection of Privacy
Security	Electronic Transactions Act, Digital Signature Laws,  Standards  IT Act etc.	Hong Kong/China, Germany, Italy, Malaysia <sup>3</sup> Singapore etc. UK (e.g., BS7799)  India	ITU: Recommendations ISO: Standards
Taxation	Internet Tax Freedom Act etc.	USA etc.	N.A.
Domain names	N.A.	Adopt ICANN practice in many nations.	ICANN
Consumer protection	Extension of existing consumer protection Act	EU etc.	N.A.
SPAM	Spam Bill (2003)	Australia, EU & USA	ITU: New initiative (2004) <sup>4</sup>
Beyond national jurisdiction	N.A.	N.A.	ITU & ISO standards EU: Cyber-crime Treaty (2002)

<sup>2</sup> Refer to a new EC guide on 'Data Protection in the EU' at [http://europa.eu.int/comm/internal\\_market/en/media/dataprot](http://europa.eu.int/comm/internal_market/en/media/dataprot).

<sup>3</sup> The Malaysian Government, *Laws of Malaysia: Digital Signature Act 1997 (Act 562) and Subsidiary Legislation*.

<sup>4</sup> [http://www.itu.int/newsroom/press\\_releases/2004/Advisory-08.html](http://www.itu.int/newsroom/press_releases/2004/Advisory-08.html)

It is only the recent when countries started to create such agencies. For instance, “a Cyber-crime Agency called European and Network Information Security Agency (ENISA)”<sup>5</sup> was created in early 2004 with a final approval by the European Union. The National Cyber Security Center (NCSC) was set up under the wing of the National intelligence Service (NIC) in South Korea in 2004.<sup>6</sup> Whilst, “Operation Cyber Seep in the USA is being coordinated nationwide between the Justice Department, the Federal Bureau of Investigation, the Federal Trade Commission, postal inspectors and customs agents with supported by state authorities and foreign governments”<sup>7</sup> – i.e., close coordination is required among relevant agencies at not only national levels but also regional and global levels, since one of the most important challenge often faced by the enforcement agencies is that the cyber-criminals have the ability to commit the crime quickly and then disappear without revealing their true identity or location. Often these criminals are located in a foreign jurisdiction. Thus, tracking them requires law enforcement agencies to be created and act faster through cyber border cooperation from a spectrum of organizations representing governments, businesses and consumer groups in various countries.

Second, cyber-law enforcement is relatively a new challenge for the most enforcement agencies. Many countries do not have necessary skilled law **enforcement personnel** to deal with computer and even broader ICT related crimes. This undercuts the efforts to battle the growing threats like cyber-crimes. In this regard, some countries have started special training for cyber policemen in India by the Ministry of Communications and Information Technologies<sup>8</sup> and Anti-Cyber Crimes Cell (ACCC) officials in Pakistan<sup>9</sup>. Many others are still developing their expertise and resources to investigate and prosecute cyber cases.

Third, according to a recent survey of law enforcement agencies, it appears that a majority of the agencies have not investigated or prosecuted any cyber cases. The reason for such laxity was attributed to mainly the fact

that the majority of its victims don't report the conduct to law enforcement agencies. Moreover, the law enforcement agencies *per se* will not take them seriously: i.e., **lack of awareness of importance of enforcement** on cyber-crimes. Most law enforcement agencies do neither recognize the serious nature of the cyber cases and nor investigate them. This requires for raising awareness and education from not only the enforcement agencies but also victims and citizens at large.

Fourth, at national levels, several countries began to impose **legal enforcements such as penalties or imprisonments** on different types of cyber-crimes. For example, according to the Spam Law passed on December 2 2003 in Australia, “first offenses will result in a maximum penalty of US\$161,000 per day for organizations and US\$32,200 per a day for individuals. Repeat corporate offenders will face a maximum penalty of US\$805,500 for each day of spamming, with individuals who are repeat spammers facing a maximum penalty of US\$161,000 per day.”<sup>10</sup> In case of Singapore, “violators of the Computer Misuse Act such as website crackers can be jailed up to 3 years of fined up to S\$10,000”.<sup>11</sup>

Fifth, **greater cooperation, harmonization and effective communications among law enforcement agencies** and relevant bodies at national, regional and international levels are essential to combat sophisticated cyber-crimes or unlawful conducts at different jurisdictions through the ICTs, especially on the Internet, since the limitation of law enforcement agencies to specific geographic jurisdictions creates serious challenges for them when they investigate activities that can be readily contrived to be extra-jurisdictional (i.e. occur somewhere else), trans-jurisdictional (i.e. occur across two or more areas), or are supra-jurisdictional (i.e. occur somewhere that no agency has jurisdiction over). To meet this challenge of cross-border cyber-crimes at regional and international levels: e.g.,

- EU issued the Cyber-Crime Treaty in 2002, which has been signed by the major European countries. Its main principle was based on a uniform approach to fight the cyber-crimes to deal with jurisdiction and enforcement.
- ASEAN countries also seek stronger security links through a consideration to develop a treaty on cyber-crime, so is the commonwealth.
- OECD developed a new web site [www.oecd.org/sti/cultureofsecurity](http://www.oecd.org/sti/cultureofsecurity) dedicated to

<sup>5</sup> ENISA will handle tasks involving risk assessment and management; follow research and standardization development; help to raise awareness among citizens, businesses and the public sector about common security threats like viruses and vulnerabilities; and support EU policy development and national initiatives. Andy Holiday, *I.T.Vibe*, November 26 2003.

<sup>6</sup> Ryu Jin, “South Korea launches anti-cyber terror center”, at [http://www.crime-research.org/news/20.02.2004/cyber\\_terrorism](http://www.crime-research.org/news/20.02.2004/cyber_terrorism), February 20,2004.

<sup>7</sup> “Online crackdown: 125 arrested in cyber fraud raid”, *The Nation (Thailand Daily Newspaper)*, November 22 2003, 5B

<sup>8</sup> Timofei Saitarly, “India holds training for cyber policemen”, at <http://www.crime-research.org/news/26.02.2004/86>, February 26,2004.

<sup>9</sup> PakistanLink, at <http://www.crime-research.org/eng/news/2004/01/Mess1901.html>, January 19, 2004.

<sup>10</sup> <http://parlinfoweb.aph.gov.au/piveb/Repository/Legis/Bills/Linked/18090301.pdf>

<sup>11</sup> “Singapore takes war on terror to the Web”, *ASIAMEDIA*, November 25, 2003

help combat security risks to information systems and networks.<sup>12</sup>

- UN ESCAP organized a seminar on 'Harmonized Development of Legal and Regulatory Systems for E-Commerce in Asia and the Pacific' to raise awareness among lawyers, justices, and legal professionals.<sup>13</sup>
- ITU as the mandates has taken various actions from developing international standards to organizing numerous seminars and meetings in order to build confidence and ensure security of ICT, especially its networks.<sup>14</sup>

Sixth, another important enforcement mechanism can be **community or industry self-regulation** such as code of conducts or practices: e.g., the USA – especially the FCC<sup>15</sup> - together with private industries<sup>16</sup> is in favor of 'un-regulation' of Internet markets or 'self-regulation' by industries themselves especially in the areas of privacy or personal data protection. Last but not least, law enforcements should be hand-in-hand with developing **technical measures** such as software (e.g., open-source e-mail software, filtering system) and hardware (e.g., a new 'chip and pin card'<sup>17</sup>).

#### Future ahead

The more cases of cyber-crimes over the converged ICTs especially through the growth of Internet and e-commerce beyond national boundaries, the more voices for regulating them at national, regional and international or multi-lateral forms. As the types of cyber-crimes vary, however, ways of tackling the different types of cyber crimes especially through legislations or regulations may diverse from one country to another, especially when they occur within a specific national jurisdiction with different definitions and socio-political environments from others. Thus, harmonization of the relevant or different national laws is increasingly required, which has been recognized and taken up actions by UN agencies like the ESCAP and ITU. As well demonstrated in such cyber-crimes as 'love virus' or 'cyber attack'

<sup>12</sup> [http://www.oecd.org/document/17/0,2340,en\\_2649\\_201185\\_20923217\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/document/17/0,2340,en_2649_201185_20923217_1_1_1_1,00.html).

<sup>13</sup> <http://www.unescap.org/tid/projects/ecom.asp>.

<sup>14</sup> Refer to <http://www.itu.int> and "Network security: Protecting our critical infrastructures", by the ITU, *Vision of Information Society*, 2003.

<sup>15</sup> William E. Kennard (ex-FCC Chairman), "We can have openness and competition by following the FCC's tradition of "unregulation" of the Internet", A speech before the Federal Communications Bar, Northern California Chapter, San Francisco, CA, July 20, 1999, <http://www.fcc.gov>.

<sup>16</sup> <http://www.cisco.com/public/privacy.html>

<sup>17</sup> As for a new payment method, consumers can enter a four-digit pin number every time a purchase is made. At <http://news.bbc.co.uk/go/pr/fr/-/2/hi/programmes/moneybox/3248010.shtm>

affected by more than one national jurisdiction, there is also need for either bi-lateral or multi-lateral cooperation on the prosecution of international hackers or criminals to go farther and possibly include a cyber-law treaty,<sup>18</sup> as practiced by the EC.

As a matter of fact, international legal instruments, which by definition embody global consensus and/or bind all member nations, could provide countries with useful and creative tools for specific and defined areas of cyber-crimes as international enforcement mechanisms: e.g., global conventions, multilateral treaties (e.g., the Cyber-crime Treaty in the EU), international laws, global standards (e.g., ITU and ISO) for confidence and security, model uniform laws (e.g., UNITRAL), and model contracts/standard terms.

Recognizing the need for confidence and security in the use of ICTs at a global level, moreover, the World Summit on the Information Society (WSIS) led by the ITU in 2003 has adopted that "... *A global culture of cyber security needs to be promoted, developed and implemented in cooperation with all stakeholders and international expert bodies. These efforts should be supported by increased international cooperation. ...*" in its Declaration of Principles.<sup>19</sup> The WSIS has also adopted the Plan of Action including that "*governments, in cooperation with the private sector, should prevent, detect and respond to cyber-crime and misuse of ICTs by: ... considering legislation that allows for effective investigation and prosecution of misuse; ...; and encouraging education and raising awareness.*"<sup>20</sup>

In view of the fact that cyber-crimes are growing at alarming rate, each country by all stakeholders needs to have more pragmatic approaches (as below) at national, regional and international levels: e.g.,

- Raise awareness of serious nature of the cyber-crimes for various target groups from individuals, industries, and governments to specific enforcement agencies.
- Revise, enact and enforce national and international laws specifying various substantive and procedural aspects of issues emerging from cyber-space: i.e., cyber-crimes.
- Harmonize different national laws to regulate and police the cyber-crimes in a consistent and collective manner at various jurisdictional aspects.

<sup>18</sup> 'Suspected hacker may face extradition requests' at <http://www.cnn.com/2000/LAW/05/09/internat.hacking.law/>

<sup>19</sup> Doc. WSIS-03/GENEVA/DOC/4, *Declaration of Principles*, WSIS, Geneva, December 12, 2003.

<sup>20</sup> Doc. WSIS-03/GENEVA/DOC/5, *Declaration of Principles*, WSIS, Geneva, December 12, 2003.

- Coordinate and cooperate between and among the law enforcement agencies of one's own country as well as other countries concerned.
- Endeavor to establish International Tribunals to regulate cyber cases or crimes increased beyond national jurisdictions.

To sum up, every stakeholder should be aware of and actively involve in preventing and solving together the *destructive* side of ICTs - i.e., cyber-crimes - with an appropriate balance between regulations and self-regulations subject to the different types of crimes in cyber-space, in order to optimize more *creative* side or benefits of ICTs, which will further transform the paradigms of our cultures, politics, and socio-economy beyond national jurisdictions in the interconnected world today.

## ICT Policies of Asia and the Pacific in the Interdependent Information Society<sup>21</sup>

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### I. Communications as an Impetus of Interdependence

Many in academic circles<sup>22</sup> have envisaged communications as an impetus of dynamic global interaction or linkage – i.e., globalization or interdependence - in a global village. In particular, communications *per se* in the light of social science can be the very issue-area, in which ‘power resources are differentially distributed.’<sup>23</sup> In other words, knowledge or information distributed or disseminated through converged telecommunications, broadcasting and computers – called information and communication technologies (ICTs) - is the very resource of power<sup>24</sup> in today's knowledge-driven or information society.

However, communication ‘technology itself is not the determining factor. It is rather efficient management and

implementation of the technology – i.e., policy, which determines a nation's competence<sup>25</sup> and development for the specific sectors including telecommunications, now ICTs. It has been by now two decades since telecommunication policy such as liberalization or privatization started from the US and the UK under the umbrella of their macro econo-politics in the early 1980s has stirred the global telecommunication sector. The liberal trend was accelerated by the Agreement of Basic Telecommunications under the World Trade Organizations in the late 1990s.

This telecommunication sector reached at the peak worldwide in the late 1990s. The telecommunication industry, strategically supported by some governments in Asia to overcome their economic recession, went hand in hand with its markets, which flourished with booms of *dot.coms* in many Asian economies under the movement of globalization. Liberalization appeared to be an ultimate direction or solution for the sector, which eventually led large-scale restructuring in over hundreds of countries worldwide with new kinds of tools regulating the sector being liberalized.

However, the telecommunication industry became sluggish globally at the dawn of 21<sup>st</sup> century along with the macro economic recession or crisis. Today's connected or interdependent global village through the ICTs is also facing the chronic issue of a widening digital divide between the haves and have-nots not only between countries but also within the countries. In reality, many countries in Asia and the Pacific were – and are still - not ready for the market-led or liberalized policies due to various reasons ranging from their social structures with different econo-political regimes at a macro level to lack of human resources for handling the sector-specific policy.

### II. Policies For ICTs & Applications

Unlike telecommunication technology<sup>26</sup> and services (e.g., especially voice), information technology<sup>27</sup> and services (e.g., data or valued-added, voice over IP etc.) over times have been developed in liberalized markets in most countries. ICTs are indeed evolutionary – if not, revolutionary - to realize such a convergence as the advent of Internet (i.e., inter-networks) enabling

<sup>21</sup> The article reflects author's own views and not of her organization.

<sup>22</sup> R.O.Keohane & N.S.Nye (1977, 1989), *Power and Interdependence* (Boston: Little Brown); and S.D.Krasner (1985:25-6), *Structural Conflict: The Third World Against Global Liberalism* (Berkeley: University of California Press).

<sup>23</sup> D.Baldwin (1980: 471-596) “Interdependence and Power: A conceptual analysis”, *International Organization*, Vol.34, No.4, and S.D.Krasner (1985).

<sup>24</sup> Eun-Ju Kim (1990), *Dynamic interlinkage between the Republic of Korea and the ITU through evolving telecommunications issue-structure*, A Ph.D. thesis, at the London City University, London, p.27.

<sup>25</sup> Eun-Ju Kim (1993), “Telecommunications development in the Republic of Korea”, *Telecommunications Policy*, Vol.17, No.2, London, pp.118-138.

<sup>26</sup> It is a technology of both/either ‘as a process [or transmission], by which A sends a message to B upon whom it has an effect’ and/or ‘as a negotiation and exchange of meaning.’ Refer to Tim O’Sullivan, John Hartley, Danny Saunders & John Fiske (1985), *Key concepts in communication*, Methuen, London, p.42.

<sup>27</sup> It is originally a technology of ‘storing and retrieving knowledge or data – i.e., computer.’<sup>27</sup> Refer to Oxford University Press (1997), *Oxford Compact Dictionary & Thesaurus*, Oxford.

transmission of knowledge, data, images (e.g., broadcasting) and even voice (e.g., telecommunication) worldwide on a real-time basis as two-way communications for both point-to-point and point-to-multipoint.

It is worth noting that each ICT sector has *evolved with different paths over times* in various aspects from technologies to policies. Technological evolution or convergence ranging from fiber-optical cables, satellites, broadband, IMT 2000, Internet Protocol (IP), to WiBro etc. indeed has led some countries to adopt technology-neutral policies and regulations especially under the GATS/WTO as well as to converge the relevant administrations.

Unlike telecommunication services (e.g., voice) required for operators' licence(s) with various conditions, moreover, IT services (e.g., data) have been historically categorized as value-added services requiring *no-regulation or simple registrations*. Thus, when talking about the policies of converged ICTs, the concept and scope are rather different from those of telecommunications alone – i.e., there is no particular need for pushing liberalization or privatization of IT. These different policies lead to compare the speed of growth or access among fixed telecommunications, broadcasting, and IT: e.g., each took over 120 years, some 50 years and less than 10 years respectively to reach around 50% of penetration rates in countries like South Korea and Japan. Thus, many argue that such ever-fast growth of IT and its sector owes to the liberalizing policy or light-handed regulation. Then, how to explain other countries like New Zealand, which introduced full privatization even without sector-specific ministry or regulator, performing less in their ICT indicators?

These ICTs have *double strengths* – i.e., not only as its own growing sector with full of potentials in the hardware/software industries but also as a means to mainstay other sectors from agricultural, heavy to biochemical industries. Furthermore, both hardware/manufacturing and software industries in each computers, broadcasting and telecommunications have been traditionally large national or multinational conglomerates. However, the converged ICTs can bring more opportunities to SMEs, which is of significance for healthy economy in information society.<sup>28</sup>

*E-commerce* ventures might involve “purchasing, developing and designing products, managing production or manufacturing, marketing, sales, service, collaboration among businesses,

distribution of products, research, dissemination of information, setting up commercial communities, educating, entertaining”<sup>29</sup>, and many others depending on creative entrepreneurship. “Business-to-Business (B2B) market is estimated to expand to US\$1.5 trillion by 2004”<sup>30</sup> compared to US\$26 billion in 1996/7. Such potential growth of B2B is well anticipated in the Asia and Pacific region, too.<sup>31</sup> In case of Business-to-Customers (B2C), although it is relatively less and slowly growing due to various factors such as lack of awareness, infrastructure, and security, it is also increasing in such sales as books, ticketing, video/movies and even houses subject to each country's culture and circumstances.<sup>32</sup>

In addition to business applications, there are growing demands for *e-learning* and *e-education* regardless of the developed, developing and even the least developing countries for better employment opportunities through up-skilling seniors, unemployed and teenagers for vocational purposes; higher education after schoolings; and distance learning in remote and rural areas.

*E-government*, well practiced in countries like Australia, Singapore, South Korea, Hong Kong/China, and Malaysia, is another critical application for transparency, efficiency and public availability of government information and administration.

Also, a concept and need for *e-medicine* or *telemedicine*<sup>33</sup> has been demanded for some times but not sufficient progress made worldwide due to various practical challenges such as technical, human and capital resources, and legal liability.

*E-centre, tele-centre* or *community tele-centre, internet-cafe* etc. have been experimented, owned or run by various ways by one person (even with one mobile-phone) in a very remote village of Bangladesh, remote communities in Australia, to the high-street shops in such countries as Mongolia, Maldives, India, and Thailand.

<sup>29</sup> Brenda Kienan (2000), *Small Business Solutions: E-Commerce*, Microsoft Press, Washington.

<sup>30</sup> It is predicted by Goldman Sachs Group Inc. (2000), which is quoted from Japan External Trade Organization, *Electronic Commerce in APEC Economies*, February, Tokyo.

<sup>31</sup> Eun-Ju Kim (2001), “Business Potentials in ICT: E-business and Plus”, a paper presented on June 16 in Shanghai, China.

<sup>32</sup> Eun-Ju Kim (2001), “Overview of developments in Asian Telecom”, a paper presented in the Indian Telecom Summit organized by IIR, October 10, New Delhi, India.

<sup>33</sup> The Malaysian Government (1997), *Laws of Malaysia: Telemedicine Act*.

<sup>28</sup> ‘59% of small business and 92% of medium-sized businesses have Internet access in UK’. Refer to *E.I.U.(2001)*, *News* on May 4 and May 9.

At the same time, the ICT services growing fast in liberal markets bring into such **challenges as increasing cyber crimes** against security, hacking, fraud, copy right, and privacy.<sup>34</sup> Thus, countries like Australia, Malaysia, Singapore, Hong Kong/China and India began to introduce not only policies (e.g., “Digital 21” IT Strategy in Hong Kong SAR<sup>35</sup>) but also legislations (e.g., Privacy Act, Digital Signature Act, Computer Crimes Act, IT Act 2000 etc.<sup>36</sup>) dealing with digital signature, electronic governance, establishment of Certifying Authority and Cyber Appellate Tribunal.<sup>37</sup> Moreover, ever fast increasing Internet Spam causes not only personal annoyance but also network congestions and viruses, against which countries like South Korea introduced penalties or fines imposed on service providers and those like Australia and USA began to introduce Spam Act. Here, it is interesting to note that the macro-economic theory of ‘invisible hands at markets’ is neither always practicable nor beneficial for all.

These pros and cons of phenomena require not a single sectoral policy but for pan-sectoral policies through awareness, collaboration and coordination among interdependent administrations, NGOs and even individuals at various levels from national to international for optimum use of ICTs and its various applications. It is also worth observing that there are not many comprehensive ICT policies or legislations as yet, although India is in the process of issuing the Communication Convergence Bill<sup>38</sup> and Malaysia enacted the Communications and Multimedia Act in 1998<sup>39</sup>.

This convergence with its pros and cons encourages not only ICT sectors but also various other sectors to review and establish **different layers of policies for various stakeholders on the following prerequisites** subject to national circumstances from geography to demography: e.g.,

- Mechanisms to raise capital or funds (e.g., bonds, soft loans, licence fees, Universal Service Obligation Funds etc.),
- Development of infrastructure (e.g., access to or availability of electricity, transportation, hardware like computers, and connectivity and interoperability of various telecommunication networks and equipments),
- Payment mechanisms (e.g., credit cards, banking, exchange with goods etc.),
- Education and training for human resources (e.g., curriculums at regular schools, vocational schools or centers, distance learning etc. for and through ICTs),
- Socio-cultural awareness (e.g., ICTs as a means for poverty eradication, equality of genders, access from the underprivileged groups including the disabled, environment etc.),
- Economic empowerment (e.g., ICTs as a tool for new business and employment opportunities etc.),
- Local languages and contents (e.g., multi-lingual software, local contents relevant to the countries or states etc.),
- Technical and legal measures for security and confidence (e.g., standards, cyberlaws etc.),
- Research, development, transfer, and implementation of new technologies not only promoting ICTs and overall industries but also affordable services at remote and rural areas,
- Political stability, visions and wills with transparency and commitment, and last but not least
- ‘Affordability’ of users including those in remote and rural areas through overall socio-economic development – i.e., poverty eradication.

### III. ICT Policies under the Macro Econo-Political Regimes

It is at large the econo-political regimes of each country, which impact on policies and performances of each sector including ICTs. According to a survey<sup>40</sup>, for instance, telecommunication service operators in countries like India, South Korea and Malaysia spurred by continued de-regulation are expected to increase their **expenditures on building telecommunication infrastructure** in 2002, whilst those like the Philippines, Thailand, Hong Kong/China and Australia will have negative growth. South Korea driven by a competitive

<sup>34</sup> Ajmal Edappagath & Eun-Ju Kim (2002), “Legal and regulatory awareness of the ICT – identifying solutions for cybercrimes”, *World Market Series: Business Briefing Global InfoSecurity*.

<sup>35</sup> Information Technology & Broadcasting Bureau (2000), *2000 Policy Address: Information Technology* in Hong Kong SAR.

<sup>36</sup> Refer to the *Privacy Act* in South Korea, *Digital Signature Act 1997 (Act 562)* and *Subsidiary Legislation and the Computer Crimes Act 1997 (Act 563)* in Malaysia and *IT Act 2000* in India.

<sup>37</sup> Taxmann’s (2000), *Information Technology Act, 2000*, New Delhi, India

<sup>38</sup> The Government of India (2002), A draft document of *The Communication Convergence Bill 2000*, New Delhi, India.

<sup>39</sup> T.S.N.A.Hamid (2001), Malaysian Communications and Multimedia Commission, “Equality, Accessibility and Affordability”, a paper presented the *Asia-Pacific Regional Workshop on Equal Access of Women in ICT*, organized by ITU, October 22-26, Seoul, Korea.

<sup>40</sup> APD (2002) “Asian carriers raise expenditure”, *Asia Pacific Development*, Report 9, GDS Publishing Ltd., p.165.

industrial policy has earlier invested in broadband Internet, which led to the world number one today.<sup>41</sup>

Whilst, it is interesting to note the overall growth of **ICT penetrations or access** combining telecommunications (fixed & mobile), broadcasting (TV), and Internet in most Asian and Pacific countries with some exceptions in the Table 1, despite falling GDP per capita from 1995 to 2000 in many ranging from Japan to most Pacific island countries due to their economic recession in 1997 and onwards. Moreover, Japan and South Korea have reached their mobile Internet penetrations up to 72.3% and 59.1% as a percentage of total mobile users, which are the world rankings of number one and two respectively.<sup>42</sup>

It is also worth comparing ICT indicators (Table 1) between haves and have-nots in this region with widening gaps in **access** to telecommunications (fixed & mobile), broadcasting and IT. For example, while countries like Hong Kong/China, Japan, South Korea, Singapore, Australia and New Zealand have already reached over 100% of teledensity combining ICT services, most of the rest still struggle with less than 10%. In the worst case, the combined ICT penetrations are less than 1-2% as in Lao, Myanmar, Afghanistan, Bangladesh, Bhutan, Nepal, PNG, and Solomon Islands.

Then, why some countries are doing better than others even in the same region or sub-region? This may be not merely due to their sector-specific policies, but more likely due to their geographic and demographic conditions, distance from the market economy, political instability, and/or most of all their economic affordability – i.e., macro econo-political circumstances or regimes. Here, let me classify Asia and the Pacific countries into largely five different types according to different economic policies and political regimes, which have directly and indirectly impacts on their ICT sectors:

- Type One: Countries like China, South Korea, and Japan with **planned economies emphasizing on export-oriented policy under the centralized regime**<sup>43</sup> at least in the early stage based on their traditionally well-disciplined and -educated populations articulate good performance and growth in overall ICT services, hardware and infrastructure, while moving forwards new technologies (e.g., broadband, wireless or portable Internet<sup>44</sup> etc.)

through demands and affordability from users – i.e., technology-keen young generations *inter alia*.

- Type Two: Those including Australia, New Zealand and Hong Kong/China ready with a **liberal policy under the light-handed democratic regime** demonstrate high overall ICT access and services based on effective and transparent regulations but with trade deficits in ICT hardware.
- Type Three: Those from Thailand to India have just managed to increase ICT access based on **slowly opening up their markets with lots of national variables from demography, bureaucracy to geography**, which have negative impacts on the speed of overall ICT growth.
- Type Four: Those middle-lower ranged from Sri Lanka to Philippine with a **liberal policy but under the unstable political regime with lack of consistency** demonstrate early introduction of liberalization in ICTs - especially competition in telecommunications, which allowed multiple operators or service providers but with slow growth especially in rural areas due to many variables from topography, inefficient and non-transparent regulatory procedures, to lack of affordability.
- Type Five: Countries including from Myanmar, Lao, Nepal, Bhutan to some Pacific islands with **small economies of scale and less commercial interests under the centralized regimes**<sup>45</sup> (e.g., military to monarch) have less resources or priority on ICTs, which is still run by a monopoly or similar.

#### IV. Any Hybrid Or Alternative Policies ?

As the information society *per se* is not the goal but a base through which the publics or stakeholders – industries and consumers alike – improve and optimize their businesses and lives, so teledensity *per se* – i.e., access - is neither a sole indicator nor goal for success or failure of the particular sector. Moreover, the *access* should be ensured as a basic right regardless of location, gender, age, and disabilities with *quality and choice of services at affordable prices* through various means of technologies subject to each country's economic, demographic and geographic circumstances. Then, can this basic right be assured by technologies or liberal markets alone? Certainly not, in any of the Types of countries in Asia and the Pacific!

That is why policies are in principle required - but neither regulations for the sake of regulators, nor de-regulation for the influence from external forces in the era of

<sup>41</sup> Korea's penetration rates for broadband Internet reached up to some 25% 17.16 % followed by Hong Kong/China with some 17% as of January 1, 2004. <http://www.itu.int/osg/spu/newslog/categories/spuNews/2004/09/15.html#a720>.

<sup>42</sup> ITU (2002), *Asia Pacific Telecommunication Indicators*.

<sup>43</sup> The term of 'centralized' is academically meant to be bureaucratic-authoritarian. Eun-Ju Kim (1990), *op.cit.*, pp.5-12.

<sup>44</sup> <http://www.itu.int/osg/spu/newslog/2004/11/19.html#a760>

<sup>45</sup> The term 'centralized' here implies authoritarian – i.e., obedience to government dictates was required of individuals. See P.W.Kuznets (1985), "Government and economic strategy in contemporary S.Korea", *Pacific Affairs*, Vol. 58, No.1, p.48.

globalization. In reality, hardly any single body on its own – whether public or private – can satisfy the demands from consumers today, which call more stakeholders or partners involving in transparent process, efficient management and effective implementation – i.e., *liberal policy*. The liberal economic policy in the ICT sectors has contributed to facilitating the development of ICT infrastructure – i.e., access and affordability – through competitive operators in some countries, especially where sector-specific liberal policy is being embraced by the macro econo-political regimes – i.e., *Type Two* – with efficient and transparent regulatory frameworks.

However, the liberal policy alone is neither the only solution nor success factor as preached by the liberal economies or international organizations. Some – particularly *Type One* – have proved and performed better in their services, hardware and even infrastructure through their incremental or progressive liberalization over times adjusting to their macro econo-political regime, which allowed them to lead ICTs not only in Asia but also in the global arena with innovative technologies and applications equipped with well-educated or knowledge-driven populations.

Whilst, the majority of countries – i.e., *Type Three to Five* – still struggle and suffer from either introducing or implementing the liberalization policy in their ICT

sectors, which does not fit into their traditional culture, social and econo-political system or their natural climates and geography. Moreover, others like Tonga and Kiribati have already begun de-privatization after having troubles from liberalization – e.g., a foreign operator entered the market has pulled out. They may not be the last ones taking into account today's unstable overall industrial performances in the ICT sectors worldwide.

In conclusion, no single country has proved that the telecommunication sector or even converged ICT sectors could be managed with invisible hands of the market alone. Any single type of policy *per se*, most of all, won't be the only success factor either, unless there are political will and commitment at the top, transparent and efficient management by policy-makers and regulators, efficient operation of – possibly competitive – suppliers, and of course demands and affordability from users for quality and choices of services at national levels. It is ultimately each country that should be able to develop and update its own – or hybrid – policies such as *Type One* over times bearing in mind of their different priorities, benchmarks, and econo-political circumstances. Last but not least, the world – both haves and have-nots – should respect each other and seek digital opportunities together to make the world better place in the interdependent or borderless information age.

**Table 1: ICT Indicators (1995 & 2000s)**

ASIA & PACIFIC REGION		GDP		TELECOM				BROADCASTING		IT				
		PER CAPITA US\$		PER 100 INHABITANTS				PER 100 INHABITANTS		PER 100 INHABITANTS				
		1995	2000	FIXED	MOBILE		TV		ESTIMATED PCs		INTERNET USERS			
N.E. ASIA	CHINA	574	847	3.30	13.81	0.29	11.17	24.71	29.30	0.22	1.93	-	2.60	
	HONG KONG, CHINA	22604	24009	53.25	57.66	12.97	85.46	34.66	49.30	15.43	38.46	3.25	38.48	
	JAPAN	40945	36865	49.61	59.69	9.33	58.76	67.32	72.50	12.06	34.87	15.93	43.92	
	MACAO, CHINA	16765	13893	37.45	39.39	8.77	43.41	11.30	28.60	-	17.86	0.28	22.54	
	MONGOLIA	416	385	3.50	4.81	-	7.62	5.93	6.50	0.32	1.37	-	1.56	
	D.P.R.KOREA	-	440	4.98	4.50	-	-	-	-	-	-	-	-	-
	REPUBLIC OF KOREA	10851	9670	41.24	47.60	3.64	60.84	32.10	36.40	10.76	25.14	0.81	51.06	
S.E.ASIA	BRUNEI DARUSSALAM	17989	14253	23.99	24.52	12.63	-	38.73	64.00	3.87	7.46	1.06	10.44	
	CAMBODIA	303	245	0.08	0.25	0.14	1.66	0.83	0.80	0.04	0.15	-	0.07	
	EAST TIMOR	-	-	-	-	-	-	-	-	-	-	-	-	
	INDONESIA	1038	728	1.69	3.80	0.11	2.47	18.33	14.90	0.50	1.10	0.03	1.91	
	LAO	370	326	0.36	0.93	0.03	0.52	0.98	1.00	-	0.28	-	0.17	
	MALAYSIA	4298	3854	16.57	19.58	5.00	29.95	22.36	16.80	3.73	12.61	0.20	23.94	
	MYANMAR	-	147	0.36	0.58	0.01	0.03	0.57	0.70	-	0.11	-	0.02	
	PHILIPPINES	1055	985	2.05	4.02	0.72	13.70	12.59	14.40	0.96	2.20	0.03	2.59	
	SINGAPORE	24114	22948	40.52	47.14	8.68	72.41	36.52	30.40	20.18	50.83	2.88	36.30	
	THAILAND	2828	1956	6.06	9.75	2.26	11.87	22.73	28.40	1.36	2.78	0.06	5.77	
VIET NAM	273	403	1.05	3.76	0.03	1.54	16.33	18.50	0.14	0.99	-	0.49		
S.W.ASIA	AFGHANISTAN	-	523	0.15	0.13	-	-	-	-	-	-	-	-	
	BANGLADESH	316	348	0.24	0.39	-	0.40	0.71	1.50	-	0.19	-	0.11	
	BHUTAN	187	233	0.90	2.03	-	-	1.72	2.00	-	0.58	-	0.36	
	INDIA	383	478	1.29	3.70	0.01	0.63	5.47	7.80	0.13	0.58	0.03	0.68	
	IRAN	1476	1555	8.60	16.03	0.03	2.67	12.17	16.30	2.45	6.97	-	0.62	
	MALDIVES	1084	1500	5.67	10.09	-	6.83	4.05	4.00	1.22	2.22	-	3.70	
	NEPAL	216	238	0.41	1.26	-	0.07	0.31	0.70	0.12	0.34	-	0.25	
	PAKISTAN	470	448	1.67	2.35	0.03	0.55	2.31	13.10	0.35	0.41	-	0.34	

		TELECOM					BROADCASTING		IT				
				PER 100 INHABITANTS			PER 100 INHABITANTS		PER 100 INHABITANTS				
	SRI LANKA	707	847	1.14	4.33	0.28	3.77	7.74	11.10	0.11	0.79	-	0.78
PACIFIC ISLANDS	AUSTRALIA	20844	20565	49.25	52.02	12.41	57.75	49.03	73.80	27.55	51.71	2.76	37.23
	COOK ISLANDS	-	-	-	-	-	-	-	-	-	-	-	-
	FIJI	2441	1846	8.39	11.00	0.28	9.25	8.93	11.30	-	6.08	-	1.82
	KIRIBATI	575	538	2.57	4.03	-	-	2.03	3.60	-	2.50	-	2.50
	MARSHALL I.	-	1577	5.73	5.98	0.48	0.70	-	-	-	5.00	-	1.28
	MICRONESIA	-	2000	7.33	8.33	-	-	2.10	2.00	-	-	-	3.37
	NEW ZEALAND	16398	13050	47.34	47.14	10.05	62.13	50.82	52.20	22.03	38.56	4.95	28.06
	PAPUA NEW GUINEA	1134	834	1.07	1.35	-	-	0.35	2.10	-	6.10	-	2.80
	SAMOA	912	1388	4.73	5.56	-	1.67	4.22	6.10	0.06	0.67	-	1.66
	SOLOMON ISLANDS	861	611	1.73	1.60	0.06	0.21	0.55	2.30	-	4.75	0.02	0.43
	TONGA	1644	1540	6.74	9.86	0.31	-	4.08	6.60	-	-	-	1.01
TUVALU	-	-	-	-	-	-	-	-	-	-	-	-	
VANUATU	1392	1205	2.49	3.36	0.07	0.17	1.18	1.20	-	-	-	2.73	

Sources: ITU (1997), *Asia Pacific Telecommunication Indicators*, ITU (2002), *Internet For A Mobile Generation*, ITU (2002) *World Telecommunication Development Report*, APT (2002), *Year Book*

## Some recent measures towards bridging the Digital Divide

*Compiled by Animesh Rathore*

The IT revolution has impacted the entire world in numerous ways. Its economic benefits and implications as well as making of several corporate success-stories have been witnessed throughout the world. Also well identified is the downside of this revolution which includes a number of issues like cyber-crimes, cultural threats, and so on. One often-discussed issue is the *digital divide*. Here some of the recent initiatives taken in the direction of reducing this divide are discussed. Prior to having a glimpse on them, it might be useful to have a closer look at the term itself. Norris (2001) in 'Digital Divide' explains the term as a "multidimensional phenomenon encompassing three distinct aspects". According to Norris, these aspects are *global divide* – 'the divergence of Internet access between industrialized and developing societies', *social divide* – 'the gap between information rich and poor in each nation', and the *democratic gap* – 'the difference between those who do, and do not, use the panoply of digital resources to engage, mobilize and participate in public life'. Now when many countries in the world are envisioning a 'knowledge society' in the era termed as 'information age', the hurdles at the ground that result in growing digital divide need to be dealt with (along with other factors) higher efficiency and innovations. The efficiency would mean lesser constraint on resources and the innovations need to take place at the technological as well as the implementation front.

### *Low-cost computers for development in dry lands of East Africa*<sup>46</sup>

<sup>46</sup> Source: APC 2004

On September 7, 2004, the Computer Aid International and the Arid Lands Information Network (ALIN) became official partners<sup>47</sup> with an objective to provide thousands of low-cost PCs (personal computers) to not-for-profit community development groups working in the rural dry lands across East Africa (EA). The partnership will provide quality refurbished PCs along with technical support service and a one-year guarantee.

The partnership has already made available 450 fully refurbished Pentium II and Pentium III PCs at Nairobi for distribution by ALIN-EA to its member organisations and other civil society structures. Through its experience, local knowledge, wide membership network and existing technical skills, ALIN is hopeful to consign the computers where they are most needed. Besides, ALIN will be responsible for customs clearance, software provision and will be committed to a one-year, parts and labour, back-to-base warranty with every machine provided. The project is based on a self-financing model with ALIN recovering cost up to US \$ 180 per machine including software and one-year guarantee. The distribution of thousands of PCs simultaneously is expected to reduce dependency on external funds and develop an income stream for ALIN's core funds that can be used to extend ALIN activities.

In the above case, and a number of other initiatives like this, there definitely exists a vast scope for increasing the benefits to masses through more innovative technologies. It is not difficult to conceive of the high feasibility of overcoming the digital divide with the conjugation of

<sup>47</sup> ALIN is a network of a thousand community development workers involved in drylands development and is responsible for information exchange activities across Kenya, Uganda, Tanzania and Ethiopia. London-based Computer Aid is a not-for-profit provider of PCs to civil society organisations in developing countries. Computer Aid has already provided over 35,000 professionally refurbished computers to schools, universities and not-for-profit organisations in more than 90 different countries.

workable partnerships and apt technology (such as the one depicted below).

### **SolarLite: A \$ 100 PC<sup>48</sup>**

*SolarPC has introduced a \$100 PC called the SolarLite – a solid-state computer targeted at organizations that require the efficiency of a low-cost, maintenance free Internet PC. The SolarLite is created to offer an ecologically and economically viable method to provide information to billions of disadvantaged people around the world. Simultaneous to the SolarLite announcement, details on the Global Education Link (GEL) project were also circulated. GEL aims at giving away a million SolarLite computers to schools in poor countries around the world. The objective of the GEL project is to improve education in third world countries and thereby encourage self-sufficiency and promote world harmony. SolarLite is acclaimed as the ‘twenty first century equivalent of teaching people how to fish’. SolarPC considers this standardized, well designed, easy to maintain, low cost PC as the key to unlocking the educational potential of the electronic age. However, the minimum order quantity for the machine is 100,000 units, which might raise concerns for smaller organisations.*

### **SolarLite<sup>49</sup>**



*The SolarLite is a book sized (9" x 7" x 1.75") machine that weighs approximately three pounds. It has a no-moving-parts design that includes a compact flash drive containing various software programs and links to free development software and educational programs. The design and construction of the machine is consistent with the goal of an environmentally friendly computer. It uses a lightweight, recyclable, aluminum case that has a 20-year warranty. Its VIA chipset based durable motherboard is a lead free product. The SolarLite operates on 12 volt DC power and can be run from a solar panel, car battery, or human powered (with a bicycle-based generator). SolarLite uses approximately 10 watts of energy, a fraction of what a standard PC consumes.*

Partnerships and alliances can play a key role in the case of initiatives like SolarLite. For instance, if a party like

ALIN, capable of serving as the link between small non governmental organisations working at the grassroots and companies like SolarPC, comes in the picture then it would be easier to allocate SolarLite to the intended beneficiaries.

Getting back to the crux of digital divide, it is not always necessary that the information-poor are poor in socio-economic terms alone. Sometimes they are also challenged in terms of physical abilities. Among the physically challenged, there are millions of visually impaired people around the world who are unable to access the print publications and are more prone to be a victim of ‘digital divide’. Fortunately for those living in few of the developed countries there now exists certain scope to reap the benefits of IT, however a much larger number of such people in the developing world are still untouched by the potential advantages of ICTs that can put them at par with their counterparts in the developed world. A ray of hope seems emerging for such people with the prominent global IT conglomerate continuing to show its commitment towards dealing with the digital divide.

### **Microsoft’s Digital Technology for Visually Impaired<sup>50</sup>**

*The Microsoft Accessible Technology Group (ATG) hosted a three-day international forum titled ‘Libraries for the Blind and Print Disabled: Moving Toward a Digital Future’ cosponsored by the Digital Accessible Information System (DAISY) Consortium<sup>51</sup> during November 8 – 11, 2004. Seventy-five library representatives from around the world attended the forum held at the Microsoft corporate campus in Redmond to share best practices and discussing new strategies for improving services to people who are print disabled.*

*Microsoft described the advantages of digital technology over conventional analog formats (such as audiotapes), like reduction in costs of converting and distributing content, sharing of information across libraries getting easier, availability of more information to more people, allowing many people to access the same information online simultaneously and enabling individual users locate specific information within texts more easily. Through a focused discussion, the forum aimed at formulation of a common strategy for transforming library collections and beginning plan for a digital technology infrastructure that would allow them to move from analog to digital formats. Microsoft emphasized an integrated, collaborative, global approach that could exponentially enhance the availability of and*

<sup>48</sup> Source: Openflows (2004)

<sup>49</sup> Picture Source: <http://www.solarlite.org/index2.html>

<sup>50</sup> Source: Microsoft (November 15, 2004)

<sup>51</sup> The consortium was formed in 1996 to facilitate transition from analog format to Digital Talking Books.

accessibility to the publications for the print disabled users.

The software giant has already developed a digital library system for the Canadian National Institute for the Blind (CNIB), acclaimed one of the world's most advanced libraries of alternative content formats, which when established provided more than 105,000 print disabled Canadians instant access to thousands of books and magazines, and more than 40 newspapers. The Digital Library combines CNIB's all online services, including the catalogue and digital repository of books, in one unified, bilingual, Internet gateway. The online library also includes the Children's Discovery Portal enabling visually impaired children to play online games, get homework help, read books online, and chat with other Canadian children like them. "For sighted people, technology makes access to information easier. For people who are blind, like me, it makes access possible", said the CNIB president during the forum.

The system works with leading assistive technology products, like screen readers and braille keyboards, and also with any back-end system, implying that other libraries could use the same software regardless of their technology infrastructure. To exercise its commitment led by ATG, Microsoft plans to avail the technical specifications and components of the CNIB distribution system including the software, free of cost, to any library for the blind and print-disabled that wants to use it, though there will be certain charges for implementation and any customization in the original solution.

The DAISY standard for talking books and multimedia publications is another leading technology in this field used by a growing number of libraries, including CNIB and Recording for the Blind & Dyslexic in the United States. A DAISY Talking Book enables the user get to chapters and sections, browse the text, skip the boring bits, go back to the interesting items, and essentially do everything that the users of any complex print book do.

While connecting special needs and mainstream issues, Microsoft cautioned that having the right technology is only part of the solution and its vision is one of empowerment for everyone. And empowering the visually impaired would include ensuring that the software incorporates a broad range of accessibility features and works well with screen readers and other assistive technology devices, and working with libraries and publishers globally to eliminate barriers, such as the lack of universal standards for converting, distributing, and maintaining digital media, which keep a lot of printed information beyond the reach of the visually impaired. The effective coordination of the national copyright laws protecting the intellectual property of authors and publishers is another missing component. Unlike United

States' copyright law that allows libraries to reproduce most printed material for use by visually impaired without paying any royalties, most nations still lack a supportive policy environment. The forum offered library representatives an opportunity to explore ways to create agreements that would enable the sharing of resources across international borders and offer global solutions while respecting and accommodating their national copyright laws. Microsoft also recommended the library representatives to look for ways to keep their digital solution for the print disabled in close alignment with solutions for mainstream markets. This will help lower costs and speed development and could have widespread benefits for every user in future.

### **UNESCO and Microsoft join hands to spread ICT skills<sup>52</sup>**

In another recent development, the United Nations Educational, Scientific and Cultural Organization (UNESCO) and Microsoft have signed a cooperation treaty after six months of discussions to collaborate on programs focused on increasing ICT access and skills in underserved communities across developing countries. While UNESCO recognizes the importance of harnessing ICTs towards sustainable livelihoods in underserved communities, Microsoft is aware of its social responsibilities and is willing to play its part in changing the scenario of technological inaccessibility. The shared goal is one of helping the removal of barriers to digital inclusion and enable people around the world to realize the full potential of technology — through education and skills development programmes, community access, and the preservation of cultural and language diversity.

The 'immense potential' of ICTs has been discussed and documented several times, though a visible change in the ground situation at larger scales is yet to take place. Such a change certainly cannot take place overnight, but with frequent innovations at technological front as well as in forming newer alliances at a global level, one can definitely expect a faster and broader impact than before.

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## The Political Economy of E-Touting

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On my recent visit to India, a colleague narrated this tale of a villager dealing with the district-level government bureaucracy. In this particular district of Madhya Pradesh, a large state in the center of India, the enlightened district collector had converted a lot of government records into electronic formats. With such conversion, it had become possible to deliver a variety of government services using the Internet. E-government had made inroads into this remote tribal belt of Madhya Pradesh.

As happens often in developing nations like India, the newly available systems -- while efficient -- were too complex for most of the rural users. In this district, a few "agents" -- essentially go-between shopkeepers, helping the users negotiate the complex field of e-government services -- had sprung up. For a small and reasonable fee, these "e-touts" helped the villagers fill out web-enabled forms, send emails, and receive and print confirmatory documents.



*Gyandoot Soochanalaya in Dhar,  
Madhya Pradesh, India\**

On the day my professional colleague was in the district headquarter town, he visited the storefront of one of these

e-touts. Along with vending of typical sundries and provisions, and operating the long distance pay phone booths, now the store-owner had become an "e-tout" and offered e-government services.

A villager walked in, and wanted help with a parcel of agricultural land that he had purchased. The land records were computerized and web-enabled, so the transfer and recording of the deed for the land could now be done electronically. The villager provided the relevant details, and the e-tout pulled up the web-enabled records, and filled the web-enabled forms. Once the request for deed transfer was submitted electronically, the villager was asked to come back a week later, to collect the printed copy of the new deed.

My colleague was curious. He asked the villager how far his village was. The villager replied it was 10 kilometers from the district town. There was no bus; he had to walk.

"Since your village is so far, aren't you better off just coming in the morning, get the work done face-to-face at the district office, and then go back to your village in the evening?" asked my colleague.

"No, Sir," replied the villager. "If I go to the offices, there would be endless problems. First, no one would give me straight answers as to whom should I see. Then, everyone from the peon to the clerks would demand a bribe. And on top of all this, they would probably make me come again and again. So instead of two trips to town, I may end up making 4-5 trips to get my land transfer done, and pay out a lot of money. I am much better off going through this shopkeeper... he charges only a small fee, and I have to make just two trips to town."

This is clearly an instance where e-touting trumps face-to-face government services, by a wide margin.

The institution of the e-tout, if managed well, may provide solutions to multiple problems in developing countries. In India as well as in many other developing countries, laws exist to provide government services in a fair manner. But corrupt bureaucracies subvert such laws. Delays become the mechanism for extracting bribes.

Consider, now, how the political economy of e-touting can change this state of affairs.

If a particular transaction, such as the land transfer by our villager, is candidate for Rs. 500 in bribes under the conventional face-to-face system, the e-tout may offer the services at a fee of merely Rs. 100 and get the work done via e-government systems. Since e-government systems are highly automated and efficient, let us assume that ten land transfer transactions can be done in the same

time that it took to get one transaction done in the old system. Keep in mind that "delay", under the old system, was mainly a mechanism for extracting bribes -- there were probably no systemic reasons for delay.

The e-touting fee for ten transactions would amount to Rs. 1000. Now, if a way can be found to split this fee -- Rs. 500 for the e-tout and Rs. 500 as an "incentive pay" for the bureaucracy, for being so efficient in processing of transactions, then everyone might be happy.

The villagers would pay a fee of Rs. 100 per transaction and save a lot of time and hassles of running from pillar to post, to move their files. The e-touting shopkeepers would have a lucrative additional revenue stream to supplement their income from other sources. And the bureaucracy would get their "cut", not as a bribe, but as some type of legitimate incentive pay. Would the bureaucrats have to work harder for the incentive pay than for the bribe? Probably not. Information technology would simplify and automate tasks. Besides, the elaborate charades and games needed for bribe collection -- and the ever-present risk of getting caught in a sting operation -- would be gone.

I am sure there are many elements of wishful thinking in the analysis of e-touting that I have just presented. But if the basic political and economic factors operate in roughly the way I have sketched out, then e-government - - intermediated via helpful storefront private sector e-touts -- may offer many solutions to multiple problems of developing nations.

\* Photograph compiled by the Editorial Team. Source URL: [http://www.i4donline.net/issue/may03/aditya\\_full.htm](http://www.i4donline.net/issue/may03/aditya_full.htm)

## ICT and Social Transformation in Rural Bangladesh

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### Introduction

The development of a society largely depends on the access to information. The Information and Communication Technologies (ICTs) greatly facilitate the flow of information and knowledge offering the socially-marginalised and unaware community unprecedented opportunities to attain their own entitlements. ICT is a critical tool to tackle development issues in developing countries. Despite ICT's massive potential, the current global information explosion has had surprisingly little impact on development activities and access to practical information for rural communities, local people and frontline development

workers in developing countries. Bangladesh is one such country rolling within the vicious circle of deprivation and obstacles.

### Country Overview and Background

Bangladesh is in the process of a transition from a predominantly agrarian economy to an industrial and service economy. Bangladesh's population remains predominantly rural where poverty is widespread. In recent years the rural people of the country empowered significantly to warrant a renewed articulation of the strategies that they could employ to reduce poverty and improve well-being. The contribution of Agriculture in the economy of Bangladesh is still highest even with its old technology and ICT can directly contribute in commercialization and increasing value added services within the sector which ultimately tends to empower the rural communities.

The loop of low income, low tele-density, poor infrastructure, low education, poor awareness, poor governance, lack of political commitment, high bureaucratic attitude and non-availability of relevant and related contents make the ICT related development activities in Bangladesh complicated, particularly in the rural areas. The existing ICT services available in Bangladesh are not concentrating on the core elements like social awareness, physical access center, local and relevant content, enterprise development, alternate connectivity and capacity building.

### ICT - An emerging development tool

The new Information and Communication Technology (ICT) is the most powerful tool among the driving forces of globalization. ICT is bringing people together, bringing the unprecedented new tools for development (like mobile phone, online citizen services – paying utility bills online, publishing public exam results on the web, distance education programs, telemedicine, online discussion forums, online business advisory and marketing information service, human right and consumer awareness through online forum, archiving of local heritage on the web, etc) through internet and CDs and have become a powerful tool to contribute in the development process. To empower the local communities with a sustainable approach, ICT is the most effective instrument. At the same time a real danger is mounting in the developing countries like Bangladesh and the poor communities of the society are being excluded from the emerging knowledge based global economy and the digital-divide is increasing among the rural peoples.



*Learning through computers: Local children at BRAC Gonokendro project, Mymensingh*

### **Poverty Eradication, ICT, Empowering the Rural Communities**

Access to information is of fundamental importance to any development process. The flow of information from and to the rural communities is an essential pre-condition for the development of rural Bangladesh towards eradication of widespread poverty. The recent development of ICT is greatly facilitating the flow of information and knowledge, beyond the border of social and economic status. It is in this context, ICTs are now widely recognized as a critical tool to tackle development issues in developing countries.

Moreover, poverty is in part a consequence of the present growth and the delivery of education and health services becomes difficult due to population growth. It also revealed that poverty reduction cannot happen in an information-deprived environment (for example, earlier farmers living in the rural areas of Bangladesh, had no access to market information and they were always deprived by the local middlemen who manipulate the prices of agri-products, but recently the Grameen Phone service bridged the information gap at a limited scale to get better price by collecting market information from different adjacent areas. Poverty reduction is possible only in an environment where publics and particularly the poor have information on the issues that affect their lives. Information empowerment is recognized as an important factor to stimulate debate and strengthen participation in the democratic processes.

Bangladesh has experienced a very successful model of connecting rural people through mobile phone service. Grameen Phone, made the achievement of ensuring communication facility for the rural Bangladesh through its mobile phone network. The initial connectivity had already been established for communication and now

need is to expand services towards dissemination of relevant development and business services.



*MPTC at Sonagazi*

### **Multipurpose Telecenter (MPTC): The Bangladesh Approach**

MPTC has become a popular approach in many developing countries and offers integrated ICT services for the rural communities with accessibility in the net (For example, India – Information Kiosks and Knowledge Center, Thailand – Thai Rural Net, Brazil – Telecenter, Indonesia – Warnet, Albania – Public Information center, etc.). In the Bangladesh model of MPTC, the focus is on youth (Both professional and unemployed) and women community of the society. MPTC offers sharing ICT based services and knowledge. Alternate Connectivity is the strategic strength of MPTC which can be defined as the combination of phases: Collecting the relevant and local / global information and material available in any format (Hardcopy, Soft copy, CD version) with social and development aspect, Selecting the related and relevant content / materials for dissemination, Converting the materials into CD version (PDF/ Word/ Graphics), Releasing the CDs on periodical basis and disseminate to the target rural communities, Ensure minimum infrastructure (PC with CD Rom) at field level. Alternate Connectivity will open new channels that bring new knowledge and information resources to rural communities.

The local promoters of MPTC model in Bangladesh have *strategic partnership* with private sector enterprises and are resolving some critical problems like connectivity, local content, SME advisory services, expert opinion, business network building, etc. These private sector groups have neither a strong presence nor a direct access to the rural areas and an NGO behind the MPTC model is ensuring the field application of the services. Some private business houses extended their support as their corporate social responsibility to promote the concept which is significantly contributing towards bridging digital divide in Bangladesh. This is a unique model of partnership between NGO and private sector to bring the benefits of ICT to the deprived rural communities in different (at present 2 centers, one at Feni and another at

Gaibandha) locations in Bangladesh. A local NGO, named SEBA (Society for Economic and Basic Advancement) has a long presence in the rural areas and is now mobilizing local communities to make aware the target groups and offer ICT services at their premises.

The project is using both traditional media (like print media – newsletter) and new technologies (like the Internet, CD) for disseminating information and advisory services. The major challenges for the MPTC initiative are addressing the less aware community (both grass root and policy makers), affordable connectivity solution, developing a *Business Model* and identifying universal service line.

Till now, the MPTC initiative is in pilot phase and an *Action Research* based ethnographic study to assess the real need and customizing services as per need of the local communities is being carried out. In short run, the project is not looking for financial return but in long run the promoters believe that it will be replicable model for other developing countries too. The project will be expanded in terms of services and extension of centers in other 5 (five) areas of Bangladesh with further private sector involvement by 2005.

### **Sustainability – A critical issue**

The benefits of the rural ICT projects should be measured not only from the economic and financial aspects, but also in terms of the real benefits empowering the local communities, which should be considered primarily to assess the sustainability of the projects. Value of the benefits in long run towards poverty eradication and social empowerment, which are the ultimate goal of any social venture, should not be ignored. While just focusing financial sustainability may distract the very objective of rural ICT endeavors, it is important to concentrate on making the rural ICT efforts self-sustainable, through offering different income generating activities in addition to development and social services.

### **Conclusion**

To overcome the vicious circle of poverty, bridge the digital divide and empower the rural communities, ICT can be utilized to build internal and collective capacity. In combination with various components and integration of services with focus to enterprise development, citizen services, social issues, MPTC will bring the benefits of modern technology for the rural communities of Bangladesh, also applicable for other developing countries. To speed up the poverty alleviation in rural areas, policy and program efforts need to support, coordinate and link work in social services, agriculture, infrastructure, natural resources, finance and rural non-farm development. The MPTC approach can bring new

window to challenge poverty in the long-run which requires integrating policies and programs in the field of rural ICT.

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## **Conference Announcements**

*Compiled by the Editorial Team*

### **International Conference on Education for a Sustainable Future**

January 18-20, 2005, Ahmedabad, India

The Centre for Environment Education (CEE India), in partnership with the Ministry of Environment & Forests and Ministry of Human Resource Development, Government of India, and with United Nations Educational, Scientific and Cultural Organization and United Nations Environment Programme, is organizing an International Conference titled 'Education for a Sustainable Future'. The event will mark the beginning of the UN Decade of Education for Sustainable Development and CEE would share its twenty years' experience in Environment and Sustainable Development Education. The forum would be a platform for the international community involved in education and communication to meet and share experiences and learning in Education for Sustainable Development. The program would comprise different thematic workshops focusing on Education for a Sustainable Future along with an exhibition. The conference would also include a workshop on 'Information and Communication Technologies (ICTs) for Sustainable Development' to discuss issues like digital divide, adaptation of technologies, need for customized content and social impacts (like women's access to technologies) along with case studies and potential for scaling up. The details on this workshop are available at: <http://www.ceeindia.org/esf/workshops/14.htm>

For further details on the conference, visit: <http://www.ceeindia.org/esf>

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### **International Conference on Information Management in a Knowledge Society (ICIM 2005)**

February 21-25, 2005, Mumbai, India

The objective of the International Conference on Information Management in a Knowledge Society is to juxtapose knowledge construction and development through various information management processes and then associated technologies. The conference will provide a platform for bringing forth local and global initiatives in this area including research as well as practical applications. ICIM 2005 is aimed at

understanding the needs of the various parties involved in knowledge creation.

The Indian Association of Special Libraries and Information Centres will host the four-day event. The exhibition stalls exhibiting relevant products and services in tune with the conference will also be operational during the conference.

Visit the ICIM 2005 website for further details: <http://www.icim2005.org/index.htm>

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### **International Conference: Methods and Technologies for Learning (ICMTL 2005)**

March 9-11, 2005, Palermo, Italy

The Institute for Educational Technologies – Italian National Research Council announces the first International Conference on “Methods and Technologies for Learning” (ICMTL 2005) to be held in Palermo (Italy) from 9th to 11th March 2005. The aim is to address the main issues concerned with evolving learning methodologies and technologies to support distance-learning processes. The main purpose of the conference is to bring together researchers, academicians, professors, educational scientists and technologists in the areas pertaining to ICT and education, and who are interested in exploring methodologies and systems and sharing current research in Education and Training Technologies.

Conference URL: <http://icmtl.pa.itd.cnr.it/>

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### **Joint Information Systems Committee Conference 2005 (JISC 2005)**

April 12, 2005, International Convention Centre, Birmingham

After the success of JISC Conference in 2004, the forthcoming conference will be built around the twin themes of Impact and Integration. The conference will reflect the breadth of JISC activities in providing guidance, advice and opportunities for the use of Information and Communications Technology (ICT) in education and research. Delegates will be given opportunities to learn about the full range of JISC’s work by participating in seminars, debates, workshops and demonstrations. In the exhibition area, JISC services and initiatives are intended to provide advice and guidance on a range of support and resources available to individual institutions.

#### ***Target Audience***

This free one day event will be of interest to all those in further and higher education and research involved in planning for and supporting the use of ICT, including: Senior managers and those responsible for developing

and implementing policy and strategy, Staff who play a role in supporting the use of ICT in their institutions, Teachers and researchers with an interest in the use of ICT.

Further details available at:

[http://www.jisc.ac.uk/index.cfm?name=conf\\_2005\\_intro](http://www.jisc.ac.uk/index.cfm?name=conf_2005_intro)

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### **Asia Media Summit 2005 (AMS 2005)**

May 9 – 11, 2005, Kuala Lumpur, Malaysia

The second Asia Media Summit (AMS) would be a unique opportunity for broadcasters around the world to share their thoughts on Information and Broadcasting with a view to be submitted to the forthcoming World Summit on Information Society to be held in Tunis in 2005 (WSIS 2005). The Asia-Pacific Institute for Broadcasting Development (AIBD) is organizing AMS 2005 in collaboration with its partners and international organizations.

Around three hundred decision makers, media professionals, scholars, and stakeholders of news and programming from Asia, Pacific, Europe, North America, Middle East and Africa will attend this annual conference. Almost all regional and International Broadcasting Unions and Associations will support the AMS 2005 including the United Nations, UNESCO, ITU, UN-ESCAP, UNICEF and other potential partners.

The AMS 2005 event will be followed by ‘Broadcast Asia’, claimed to be the largest Electronic Media fair for Asia, to be held in Singapore from June 14 to 17, 2005. The fair will feature the latest broadcast technologies and AIBD will contribute to the program through professional sessions.

For more information on forthcoming AIBD events, please visit:

<http://www.aibd.org.my/conferences/>

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### **International Conference on Information and Communication Technology in Management (ICTM 2005)**

May 23-25, 2005, Melaka, Malaysia

The ICTM 2005 is an attempt towards bridging the gap between academic learning and real life practices in information, communication technology (ICT) and high-performance management systems. The conference will help identify latest issues, such as, innovative tools and techniques leading to breakthrough performance in interfacing ICT and management. The conference will be useful for technology-based companies and target-oriented firms in gaining knowledge, concepts, thoughts, techniques and new practices along with identification of new generation customer needs. The conference will

invite academicians, researchers and diverse professionals to address emerging issues in development in the era of increasingly unstructured and heterogeneous lifestyle.

For further details, please visit:

<http://www.mmu.edu.my/ictm-2005>

### **World Information Technology Forum (WITFOR 2005)**

August 31 – September 2, 2005, Gaborone, Botswana

The second World Information Technology Forum (WITFOR) will be hosted by the Government of the Republic of Botswana, in collaboration with the International Federation for Information Processing (IFIP) and UNESCO. The three-day Conference is intended to help implement information development strategies and projects in the developing world. The conference will also discuss the role of ICT in addressing specific issues, such as HIV/ AIDS, poverty and digital divide.

The anticipated outcome of WITFOR 2005 is to develop and foster a clear statement of political will and a concrete plan of action for achieving the goals of the Information Society, while fully reflecting all the different interests at stake. This plan of action will be submitted for adoption as the 'Gaborone Protocol' in the UNESCO General Conference in 2005.

Further Information on the event is available at:

<http://www.witfor.org.bw/witfor/home.html>

### **IFIP WG 9.4 Working Conference**

The International Federation for Information Processing (IFIP) Working Group (WG) 9.4 in collaboration with The National Information Technology Development Agency (NITDA), Nigeria and the Nigerian Computer Society (NCS) is holding its 8<sup>th</sup> International Conference on Social Implications of Computers in Developing Countries in Abuja, Nigeria on May 25-27, 2005. The City of Abuja is the Federal Capital Territory and the capital of Nigeria. It was created in 1976 and officially replaced Lagos as capital in December 1991, after 15 years of planning and construction. The city is located in a scenic valley of rolling grasslands in an ethnically neutral area. Abuja has a very beautiful weather, all year long with exquisite scenery consisting of magnificent hills such as Gwagwa Hills, Chukuku Hills, Agwai hills and the famous Zuma Rock.

The theme of the 2005 conference is **Enhancing Human Resource Development through ICT** and it will explore issues concerned with building a skilled and adaptable workforce in developing countries (DCs) for the information age. So far we have received excellent research papers, research-in-progress reports, case studies and proposals for tutorials and panel discussions, which discuss various ICT HR capability issues that are relevant for DCs to function effectively in the changing technological and business environment of the 21<sup>st</sup> Century.

Our keynote speaker is Professor Subhash Bhatnagar. Professor Bhatnagar is currently an e-Government Advisor with the Information Systems Group at the World Bank, Washington DC, USA (on leave from the Indian Institute of Management, Ahmedabad). He is the founder and first chairperson of the International Federation of Information Processing (IFIP) WG 9.4 – Social Implications of Computers in Developing Countries from 1989 – 1995. We are extremely delighted to have Professor Bhatnagar as our keynote speaker.

Furtherance to the catalytic role of the IFIP WG 9.4 and as part of our overall plan to continue to improve the relevance of our conferences, we are starting a new associated event at the Abuja conference which is targeted at discussing specific ICT-related issues of importance to, and suggested by, the host. The 2005 conference will focus on the importance of introducing information systems (IS) education in Nigerian higher institutions of learning. In spite of the popularity of IS in Western countries, and its relevance in organizations and businesses, the field is not well understood by academics and professionals in the developing world and Nigeria in particular. This workshop will therefore aim to bring together international IS academics and professionals as well as academics, professionals and policy makers from the host country to discuss the relevance of IS as an academic discipline. We look forward to an extremely stimulating and challenging discussion.

Further information about the conference can be found at: [www.ifipwg94.org](http://www.ifipwg94.org)

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**Editorial (continued from page 1)**

On a positive note, I am happy to report that the Center for Electronic Governance (CEG) which publishes this newsletter, has completed five years. When CEG was started, the mission of CEG was to create awareness about the potential of e-Governance in India and the developing world. CEG was expected to develop a few proof-of-concept projects. In the last five years, the idea of e-Governance has got mainstreamed. There are many countries like Sri Lanka and India which have large national programs on the anvil. I was recently in Bangladesh where a group of senior civil servants were convinced that e-Government needs to be introduced in Bangladesh for creating an enabling environment for the private sector to flourish. However, making a success of a national program on e-Government (scaling up from pilots to national scale and moving from successful applications in a few departments to the entire government) is not going to be an easy task. Much has to be learnt on how such national programs can be organized and managed. The CEG is therefore redefining its mission to focus on understanding these challenges and also to promote sharing of knowledge and best practices. To help this effort CEG Website has been revamped. We encourage readers to visit the website and provide feedback. We also invite potential partners to contact us for cooperation in research and training activities.

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**The IFIP WG 9.4 Newsletter Website**

*The **Information Technology in Developing Countries** Newsletter has been published by Prof. Subhash Bhatnagar (Founding Chairman of IFIP WG 9.4) through support of various agencies such as IDRC and COMNET-IT in the past. In the recent years, the Newsletter has been supported by the Indian Institute of Management, Ahmedabad (IIMA). IIMA has designated the Centre for E-Governance (CEG) to be the most appropriate home for the Newsletter. Henceforth it has been published as a joint publication of IFIP WG 9.4 and CEG, IIMA.*

*A legacy of 10 years of print circulation to its credit, this newsletter is now published on the web.*

*The next issue of the newsletter will be published in April 2005. For Archives, Subscription details and Guidelines for contributions, please visit the Newsletter website:*

<http://www.iimahd.ernet.in/egov/ifip/wg.htm>

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