E - Strategy

An Entry Ramp to the E-Society

Illustration: Graficim

Our Goal

To foster the deployment of secure, cost-effective and sustainable IP-based infrastructure and value-added services in developing and least developed countries worldwide.

Our Strategy

- To integrate the development of IP infrastructure with the roll-out of cost-effective and secure value-added e-services for the government, business, commerce, education and health sectors.
- Enable public and private sector entities to participate in developing the core infrastructure through the use of value-added e-services.
- Encourage the participation of various types of partners through a technology-neutral and non-exclusive framework for global deployment.

Our Activities

- **Technology Implementation:** Coordinating the deployment of IP infrastructure together with value-added services (e.g. IP Telephony) as well as the integration of voice and data for various sectors.
- **Capacity Building:** Facilitating the development of local capacity through human resources development in IP and e-services technologies.
- **Policies and Strategies:** Providing guidance in the adoption of appropriate policies, strategies and the legislative environment for e-services deployment.
- **Partnerships and Alliances:** Encouraging beneficial partnerships and alliances with and between various types of public and private sector entities.

Our Partners

Partnerships are critical for the development of sustainable, cost-effective service-based e-applications and secure transaction technology. Three agreements have been signed so far:

- **Fundandina:** This partnership led to an operational electronic commerce centre in Venezuela, generated new alliances with other major players from the Latin American region, several operational ICT projects, a centre for training and development providing ICT training and more than 90 Internet portals.

- **WISeKey and World Trade Centre:** An agreement with WISeKey and its industry partners and trade communities of the World Trade Centres to expand secure e-transactions in 100 developing countries has attracted several leading technology providers, who have contributed software, hard-ware, services and consultancy to develop public key infrastructure, applications and services in several countries.

- **Goodwin Procter LLP:** Free legal assistance is provided to ITU Member States who request it to establish the legislative framework for e-services. The Washington-based law firm will evaluate the country's requirements and present a report on procedures, guidelines and laws to be created or modified.

A NEW INCLUSIVENESS

ITU has recently launched a new and broader framework for collaboration in building trust and secure infrastructure in developing countries through a Memorandum of Understanding (MoU) called **World e-Trust**. This multilateral framework is intended to enable more actors to participate and for developing countries to work hand-in-hand with technology providers and play a more active role in building the global information society and in creating digital opportunities.

Public Key Infrastructure (PKI): The Key to the Digital Age

Build the Infrastructure and They Will Buy

A secure and robust infrastruture is fundamental to building confidence in the use of public networks for the delivery of value-added e-services. More than 100 developing and least developed countries are seeking the assistance of ITU in deploying such infrastructure. Four LDCs (Burkina Faso, Cambodia, Mali and Senegal) are amongst the first twelve countries scheduled to have operational infrastructure for digital certification and value-added e-services. Through its Electronic Commerce in Developing Countries (EC-DC) venture, ITU's E-Strategy Unit has had a key role in the ongoing deployment of Public Key Infrastructure (PKI) technology in more than ten countries, involving many organizations including telecom operators, ministries, chambers of commerce, regulatory agencies, Internet Service Providers, trade associations and federations, World Trade Centres, NGOs and financial institutions.

The unit has also coordinated with UNDP, UNIFEM and African Women Entrepreneurs from the Diaspora in elaborating strategies for mainstreaming women and women's concerns in ICTs, through projects such as wireless IP-based network to facilitate e-commerce for a business women's association in Cameroon. Provision of Internet infrastructure in the form of hardware, software and training enables the 3,500-strong membership of the non-profit NGO to join the online economy and distribute their products, including fruits and clothing, worldwide. The unit works in partnership with WTC Geneva, WISeKey SA and many private sector companies to build e-transaction infrastructure and create other IP-based e-services (such as e-commerce, e-government and e-marketplace).

ITU and WISeKey tested and launched a PKI-enabled secure B2B portal in May 2001 and one of the early beneficiaries of this e-marketplace will be EPZDA Mauritius. National operations providing e-payments and secure e-transactions, funded by the public and private sectors, have also been launched in Brazil, Morocco, South Africa and Venezuela.

The E-Strategy Unit makes available secure and low-cost solutions from a consortium of public key infrastructure providers enabling developing countries to establish infrastructure for digital certification and value-added e-services. In-kind contribution of more than USD 10 million from WISeKey and its industry partners and more than 16 months of technology and application development have helped evolve appropriate solutions for the particular needs of participating developing countries. *Corporación Ecuatoriana de Comercio Electrónico* (Corpece), an Ecuadorian enterprise, is one of the early beneficiaries of this effort. Along with industry partners, it has benefited from digital certification and value-added e-services and training, and is now authorized to issue digital certificates to national entities wishing to conduct various forms of electronic transactions. Similar projects involving a variety of entities are ongoing in various countrie. E-Strategy has also been a catalyst in the creation of the B2B e-marketplace, www.trusteportal.com.

Thanks to ITU, for the first time, several developing countries have become actively involved in deploying services aimed at building security and trust (using digital certification and digital signatures) and extending beyond commercial applications to societal ones such as health, business, education and government.

IP: Enabler of ICTs

The possibility of transmitting voice over IP-based networks, with all its attendant challenges and opportunities, is a milestone in technology convergence. Following the World Telecommunication Policy Forum on IP Telephony in March 2001, ITU's Telecommunication Development Bureau has received several requests to assist developing countries in mapping the path from circuit-switched to IP and Multi-protocol networking. In response to the concerns and needs of developing countries, E-Strategy has advised and assisted on the technical, socio-economic and policy issues pertaining to the introduction of IP Telephony (see www.itu.int/ITU-D/e-strategy/internet/iptelephony).

Most recently, Mauritania's Secrétariat d'Etat en nouvelles technologies (SENT) adopted E-Strategy's recommendations for its ICT policy with a view to developing IP-based LAN, WAN and telephony for its e-government project, a model also being planned by Burkina Faso.

In Cameroon, technical and financial assistance was provided to the *Association pour le soutien et l'appui à la femme entrepreneur* (ASAFE), based in Douala, to obtain a high-speed IP wireless connection to the national backbone. Technical assistance was provided to Sotel, the national operator in Chad, and to Gamtel, the Gambian telco, to exploit the potential of IP for Internet, intranet, extranet and telephony applications. Technical assistance and training was provided in IP networking to Costa Rica, using modern planning tools provided by NTT Comware. In partnership with UNDP, E-Strategy is also exploring implementing Internet nodes and a national IP backbone in Congo-Brazzaville. Mali's operator, Sotelma, is also receiving assistance in implementing Internet remote access. Technical assistance is also being provided to Rwanda's education network (RwEDnet), under the Imfundo project supported by the United Kingdom's Department for International Development.

Major E-Applications Projects Worldwide

Completed

Brazil
Câmara de Dirigentes Lojistas (CDL) de Belo Horizonte with 10,000+ retail and export members, and *Federação de Serviços do Estado de São Paulo* (FESESP) with 25,000+ members. Training on technology strategies for secure e-commerce to membership of CDL and FESESP.

Morocco
Secrétariat d'Etat des postes et technologies de l'information – Technology strategy formulation, training and project coordination for a national e-commerce infrastructure launched in February 2001. Secure solutions provided to large and small businesses in the region at a cost of more than USD 2.5 million. www.septi.gov.ma/

South Africa
Steerage Information & Marketing – ITU's first EC-DC project launched in March 1998 to demonstrate the benefits of e-commerce for an African micro business. Currently being expanded to other African countries with other partners. www.steerage.co.za

Venezuela
Fundandina – Built B2B e-commerce infrastructure in Santiago del Táchira. Led to significant investments and alliances, more than 90 e-commerce portals and the creation of a centre promoting research and development of alternative training. www.fundandina.org

Viet Nam
Vinakey, the first Asian electronic commerce centre operational at the Viet Nam Trade Network. Part of the ITU-WTC Geneva-WISeKey Agreement. Allows the interconnection of major e-commerce projects in both developed and developing countries. Due to high cost of Internet access, Vinakey's website is no longer available.

In progress

Bulgaria
Action plan and implementation plan (2002-2005) for customer on-line government services.

Burkina-Faso
Chambre de commerce, d'industrie et d'artisanat (CCIA) and

Côte d'Ivoire
Association pour la promotion des exportations (APEX) Will deliver e-services based on digital certificates.

Cambodia
Ministry of Posts and Telecommunications. Funding from the Swiss Federal Office for Communications has enabled the ministry to install hardware and software.

Cameroon
CAMTEL National Telecommunications Operator National e-commerce platform in final phase, also provides credit-card-based payment services. Hardware and software installed.

Mali
Société des Télécommunications de Mali SOTELMA

Peru
Lima Telecommunications Operator (*LimaTel*)

Senegal
SONATEL, Trade Point Senegal (TPS) Telecommunication operators see PKI infrastructure as an addition to their portfolio.

Colombia
National Association of Notaries

Cuba
Empresa de Servicios Informáticos de Santiago de Cuba (ESI Stgo) Ongoing e-commerce project to enable multipurpose community telecentres for the Province of Santiago.

Iran (Islamic Republic of)
Ministry of PTT E-commerce project for D-8 Members: Bangladesh, Egypt, Indonesia, Iran, Malaysia, Nigeria, Pakistan and Turkey. Input from private sector also

Turkey
World Trade Centre in Ankara, Turkey

Pakistan
Sysnet Telecommunications and networking systems Integrator will be authorized to issue digital certificates.

Bridging the Confidence Divide

In the face of rapidly-evolving technology, a well-steered policy and a well-designed legal framework are critical to fostering an environment for secure e-services to flourish in developing countries. Both buyers and sellers in cyberspace seek the confidence that their electronic transactions are secure.

Often this requires a review of a multiplicity of underpinning laws in domains like Digital Certification, DigitalSignatures, Electronic Contracts, Applicable Law and Jurisdiction, Copyrights, Consumer and Privacy Protection and ISP Liability. ITU's E-Strategy Unit provides policy guidance and assistance to developing countries to help them adopt appropriate national (and regional) policies and strategies for the introduction of new technologies and services.

It also has a role in facilitating the legal and institutional mechanisms to create the environment for providing cost-effective serv-ices. Through an agreement with Goodwin Procter LLP, ITU has assisted countries like Mongolia in establishing the legislative framework for e-services. The law firm will evaluate the existing laws and then propose changes to enable secure e-transactions to take hold. Governments and legislators then make the necessary amendments and enact the new laws.

Seminars, training workshops and conferences, both internal and external, are the most effective means of transferring expertise, sharing insights and building local capacity in security and trust technologies on a large scale. At many venues, the E-Strategy Unit has laid the groundwork for e-commerce implementation by raising awareness of potential legal, policy and regulatory hurdles to e-services, while also demonstrating trust technologies for e-business. In addition, Fundandina in Venezuela has also been the site of more than 27 courses and seminars created with input from ITU.

In cooperation with AFRALTI, ITU's regional Centre of Excellence for Eastern and Southern Africa, handbooks have been published on IP networking support for a Global Information Infrastructure in Africa. Also available is a *Guide on Managing and Developing Network Connections and Interconnections to National Internet Nodes*.

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Among the highlights in this domain are:

- **More than 100 developing countries – WISeWorld2000** Demonstrated PKI and addressed policy, legal and technology issues with the assistance of over 50 leading technology providers.
- **Pacific Islands Telecommunication Authority** Assistance in technology strategy and legal domains for e-services.
- **Asociación de Empresas de Telecomunicaciones de la Comunidad Andina (ASETA)** Provided technical assistance to harmonize the legal texts for the Andean Community Member States (Bolivia, Colombia, Ecuador, Peru and Venezuela).
- **Ministry of Post and Telecommunication of Cameroon** Participated actively in consultations to define a national policy for e-transactions and ICTs. Provided guidance on an action plan for expanding Internet and e-commerce and proposed recommendations for concrete actions to be undertaken by the Government of Cameroon.
- **Moroccan ministries, business and industry** Provided guidance and recommendations to the Government of Morocco to establish a national framework for e-commerce.
- **Tunisian Internet Agency** Recommended policies and strategies aimed at facilitating e-business in the Arab region. Fostered the creation of an Arab e-commerce working group.
- **Algerian Ministry of PTT** Provided policy assistance and technology strategies on a project to establish a technology park for the use of new technologies such as certification and electronic transactions.
- **Organization of Eastern Caribbean States (OECS)** Recommended policy initiatives to boost e-commerce in the sub-region.
- **Nigerian Communication Commission** Proposed a technology strategy for stimulating e-business.
- **Ministry of Commerce and Industry in the Sultanate of Oman** Proposed policy and strategies aimed at addressing e-business challenges in the Arab region. This led to the Oman Declaration.
- **Cambodia, Lao PDR and Viet Nam** Provided advice and guidance to senior telecommunication officers on the development of e-commerce.
- **Burundi** Defined and proposed ICT policy framework.
- **Mauritania** Assisted the Secrétariat d'Etat en nouvelles technologies (SENT) on National ICT Policy and Strategy.
- **African region** Advocacy in reviewing current policies related to management and allocation of IP addresses. Provided guidelines for the creation of a Regional African Internet Registry and a regional IP backbone.

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