

**COMMENT JETER UN PONT SUR LA LIGNE DE PARTAGE DU NUMÉRIQUE**

Comment mettre en place la structure du commerce électronique dans bien plus de 100 pays en voie de développement et en assurer la sécurité? Alexander Ntoko explique. La solution s'appelle «Electronic Commerce for Developing Countries» (EC-DC) (Commerce électronique pour pays en voie de développement) et c'est un projet de la plus ancienne organisation intergouvernementale au monde, l'Union internationale des télécommunications. EC-DC vise à mettre en place un commerce électronique de pointe et des technologies sûres avec une infrastructure et des services qui vont au-delà de la gestion des affaires. L'infrastructure PKI actuellement mise en place sera également utilisée pour les services électroniques gouvernementaux, éducatifs et de santé, déclare l'auteur, qui est le directeur de projet de cette énorme entreprise.

**DIE DIGITALE KLUFT ÜBERBRÜCKEN**

Wie bauen Sie eine E-Commerce-Struktur in gut über 100 Entwicklungsländern auf – und gewährleisten ihre Sicherheit? Alexander Ntoko erklärt... Es wird 'Electronic Commerce for Developing Countries' (EC-DC = Elektronischer Handel für Entwicklungsländer) genannt und ist ein Projekt der ältesten zwischenstaatlichen Organisation der Welt, der Internationalen Telekommunikations-Union. Zielsetzung von EC-DC ist es, eine führende E-Business- und Sicherheitstechnologie mit einer Infrastruktur und Serviceleistungen aufzubauen, die über das Betreiben von Geschäften hinausgeht. Die PKI-Infrastruktur, die aufgebaut wird, wird auch für E-Regierung, E-Bildung und E-Gesundheitsdienste verwendet werden, sagt der Autor, der Projektmanager dieses riesigen Unternehmens ist.

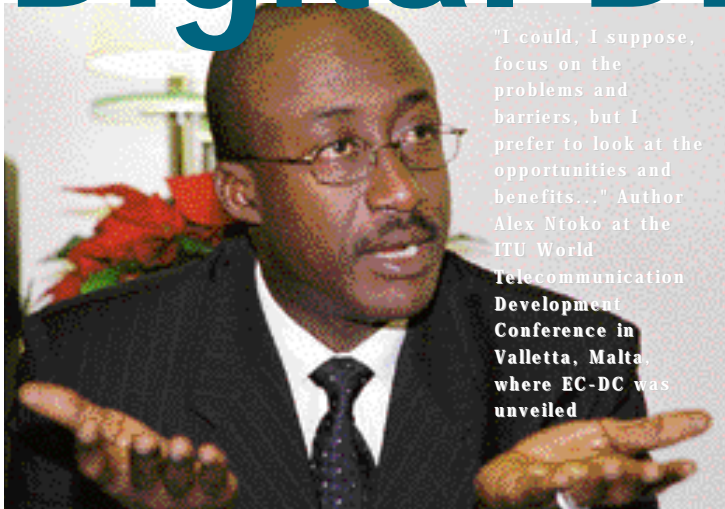
**ATTRAVERSANDO IL "DIGITAL DIVIDE"**

Come lanciare un'attività in rete in ben oltre 100 paesi in via di sviluppo ed essere certi che sia sicura? Alexander Ntoko ci fornisce alcune spiegazioni in proposito. È chiamato EC-DC - Commercio Elettronico al servizio dei Paesi in Via di Sviluppo - ed è un progetto elaborato dalla più vecchia organizzazione intergovernativa del mondo, l'Unione Internazionale delle Telecomunicazioni. Scopo dell'EC-DC è quello di attuare e-business di punta e tecnologie sicure, avvalendosi di una infrastruttura e di servizi che vadano oltre l'attività trainante. L'autore aggiunge inoltre che l'attuale infrastruttura PKI verrà usata anche per i servizi e-government, e-education e e-health, quindi servizi in rete riguardanti l'attività governativa, la formazione e la salute, impegno enorme di cui lo stesso è Project Manager.

**TENDER UN PUENTE SOBRE LA DIVISIÓN DIGITAL**

¿Cómo puede construir una estructura de comercio electrónico en más de 100 países en desarrollo y estar seguro de que es segura? Alexander Ntoko lo explica... El nombre de este proyecto es 'Comercio Electrónico para Países en Desarrollo' (EC-DC) y lo realiza la organización intergubernamental más antigua del mundo: la Asociación Internacional de Telecomunicaciones. El objetivo del EC-DC es establecer comercio electrónico de vanguardia y tecnologías seguras con una infraestructura y unos servicios que van más allá de llevar a cabo actividades comerciales. La infraestructura PKI instalada se utilizará también para servicios electrónicos gubernamentales, educativos y sanitarios, afirma el autor, que es el director de proyecto de esta enorme tarea.

# Bridging the Digital Divide



"I could, I suppose, focus on the problems and barriers, but I prefer to look at the opportunities and benefits..." Author Alex Ntoko at the ITU World Telecommunication Development Conference in Valletta, Malta, where EC-DC was unveiled

How do you put an e-commerce structure in place in well over 100 developing countries – and make sure it's secure? Alexander Ntoko explains...

**A**s the oldest inter-governmental organisation in the world, the International Telecommunications Union (ITU) has been producing technical standards for more than a century.

And as technologies evolved and the need for rapid access to ITU standards became more pressing, we set up an e-business infrastructure in the early 1990s – security was, then as now, a vital aspect. Given our world-wide remit, the question was how to assist developing countries to benefit from our experience and allow them to securely access new markets and get a fair return for their products, by-passing the numerous middlemen?

**The EC-DC Pilot**

That question and others led to the idea of implementing an e-commerce pilot project in December 1997. EC-DC – Electronic Commerce In Developing Countries – was chosen as the pilot's acronym and we focused on business-to-consumer (B2C) e-commerce using credit cards for payment.

Accordingly, the massive resource of the ITU's technical assistance and ITU-

developed software were focussed on an African micro-businessman who wanted to sell masks via the Internet.

In March 1998, the working EC-DC pilot was unveiled at the ITU World Telecommunication Development Conference in Valletta, Malta. And by September, EC-DC was approved by the ITU as a 'special development initiative' with a global scope.

Since the EC-DC initiative crosses a number of ITU programmes aimed at bridging the digital divide and enabling developing and least developed countries (from all regions) to be active participants in the networked economy, both public and private support came quickly from the ITU's 189 member states and more than 600 leading private sector companies.

That said, funds were not unlimited and with a project of this scope, how do you really make e-commerce a

reality in developing countries?

**WTC & WISeKey**

That question led to the ITU, World Trade Centre Geneva (WTC) and the World Internet Secure Key (WISeKey SA) partnership agreement signed on 17 May 1999 – the 135 anniversary of the ITU, also celebrated as World Telecommunication Day. The objective was to enable the ITU to draw on WTC's infrastructure and WISeKey's certification services in expanding EC-DC. A percentage of the revenues generated by WISeKey's certification services would also be put into a trust fund to finance e-business projects in those developing countries.

It's important to state that the mechanism for generating revenues does not involve any form of tax or levies on transactions. WISeKey and World Trade Centre were chosen because they enabled the ITU to preserve its

technology neutrality by working with partners who can integrate various technologies and make these available to the participating countries.

And thus, through separate agreements between

objectives of the host country organisation.

The agreement with WISeKey is, however, important for the project as it enables rapid expansion in several countries and provides an integrated, single

possibilities of the networked economy. Electronic commerce is not just about infrastructure, however: the rapid rate of change in technologies requires that engineers in developing countries are trained to keep pace and play an active role in the development, implementation and operation of e-commerce services. It's also vital that the environment encourages the development and use of new ICTs.

## EC-DC Funding

Money comes mostly from the host country and from participating industry partners who provide discounts and in-kind contributions (services, human resources, software and hardware).

The ITU co-ordinates activities and provides neutral and objective technical advice based on our experience and broad contact with the leading technology providers. It works as follows:

- ITU member states – including private sector companies from these countries – send a request for assistance to the ITU;
- We perform a feasibility study to define the scope, technical and financial requirement for the project;
- Industry partners who can provide solutions to the problems and objectives identified are selected, and
- The entire implementation is co-ordinated by the ITU.

In parallel to this, through meetings, workshops and conferences, we address the policy and strategy issues that will facilitate the project deployment, targeting the host country's decision-makers. Training is part of the package and the emphasis is to empower professionals in developing countries.

## Main Problems

Developing countries' entrepreneurs who're inspired enough to embark on e-commerce don't always have access to the necessary funds. As part of the policy and strategy objective, the ITU also raises awareness so that in cases where local

funds (from government and the private sector) can be obtained, the decision-makers are aware of the importance of e-commerce.

But without doubt the main problem is the absence of financial services from local banks to put a payment system in place. A lot of our efforts have gone into finding financial institutions that will make this happen.

Poor and expensive infrastructure is another barrier, but as privatisation, liberalisation and the process of convergence continues, I believe that prices for telecommunication services will fall as incumbent operators face stiff competition and alternative access technologies & services will be widely available.

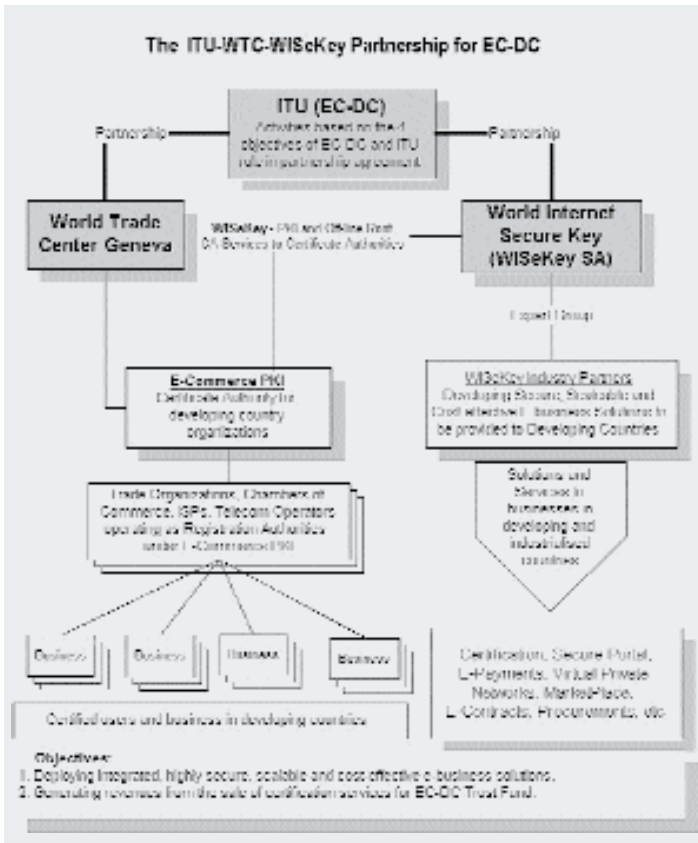
Finally, security itself can cause problems – eg: using a complex technology like Public Key Infrastructure (PKI) in the absence of a legislative environment that recognises e-transactions, digital signatures and encryption. Our experience has shown that these technologies can still be deployed, however, while the legislative framework is being put in place.

## EC-DC Status

A total of 225 organizations are today participating in EC-DC, including government ministries, telecom operators, chambers of commerce, internet service providers, trade associations & federations, NGOs and financial institutions.

It's almost certainly the largest (in terms of geographical coverage) e-business deployment on the planet and is now being expanded through more than 110 countries in Africa, the Asia & Pacific region, Europe & the CIS, the Americas and the Arab States. Activities include:

- Infrastructure Development – with WTC Geneva, WISeKey and many private sector companies, projects to build e-business infrastructures in more than 100 countries are being deployed and are



WISeKey and other technology providers, several leading ICT companies have also joined the project and are contributing their technologies and services – packaged as entry-level e-business solutions – free to EC-DC participants. To ensure sustainability, however – as well as minimum investment for developing countries – a business model has been developed that includes sharing revenues generated by the EC-DC organisations with those technology providers.

That said, not all EC-DC projects come under the ITU-WTC-WISeKey agreement – there're national projects where the industry partners are different. Here, the ITU assists in the feasibility study, in defining the technical and financial requirements and in selecting the technology provider to meet the

and complete solution platform bringing together several and sometimes competing technology providers.

## How It Works

The goal of EC-DC is quite different from such other projects as PeopLink, where the focus is on providing e-commerce services to businesses in developing countries using existing infrastructures in industrialised countries. To understand how EC-DC works, it's important to focus on the ultimate goals:

- To establish e-businesses in developing countries run and operated by local professionals;
- To put in place a shared infrastructure that will be run by a commerce service provider and make it possible for businesses around the region to take advantage of the

## Who's Who In ED-DC?

Countries participating in EC-DC include: Algeria; Argentina; Armenia; Australia; Bahamas; Bahrain; Bangladesh; Belarus; Bhutan; Bolivia; Bosnia Herzegovina; Brazil; Brunei Darussalam; Bulgaria; Burkina Faso; Burundi; Cambodia; Cameroon; Canada; Cape Verde; Central African Republic; Chile; China; Colombia; Costa Rica; Cote d'Ivoire; Croatia; Cuba; Cyprus; Czech Republic; Dominica; Dominican Rep.; Ecuador; Egypt; El Salvador; Eritrea; Ethiopia; Fiji; France; Gabon; Georgia; Ghana; Greece; Guatemala; Guinea; Guinea-Bissau; Honduras; Hungary; India; Iran; Italy; Jamaica; Jordan; Korea (Rep. of); Kyrgyz Republic; Lao P.D.R.; Lebanon; Malawi; Malaysia; Maldives; Mali; Malta; Mauritania; Mauritius; Mexico; Monaco; Mongolia; Morocco; Mozambique; Namibia; Nepal; New Zealand; Niger; Nigeria; Oman; Pakistan; Palestinian Authority; Panama; Peru; Philippines; Portugal; Qatar; Romania; Russia; Saint Lucia; Samoa; Saudi Arabia; Senegal; Seychelles; Singapore; Slovakia; Slovenia; South Africa; Spain; Sri Lanka; St. Vincent & The Grenadines; Switzerland; Syria; Tanzania; Thailand; Trinidad & Tobago; Tunisia; Turkey; Uganda; Ukraine; United Arab Emirates; Uruguay; USA; Venezuela; Vietnam and Zimbabwe.

operational before the end of 2001. In addition to these countries, there're other projects in Brazil (for more than 60,000 businesses), Cameroon, Cape Verde, Morocco and Venezuela.

- Gender Equality – the ITU is providing technical and financial assistance to a 3500-member association

of women entrepreneurs (ASAFE) representing several countries. With the financial support of the Japanese government, this project empowers women entrepreneurs as active players in the digital economy. Other activities include a Women's Cyberforum in Cameroon and a joint ITU / UNIFEM forum at the UN in New York for women from all regions of the world.

- Assistance to Least Developed Countries (LDCs) – more than 20 LDCs from all regions (out of a total of 48) are benefiting from technical assistance and training provided by the ITU and its industry partners in establishing e-business infrastructures and local capacity building.

The ITU has actively participated in various workshops and seminars, with particular emphasis on assisting LDCs to set up their e-commerce endeavours and address policy and strategy issues. As an example, the ITU actively participated in organising e-business workshops at the Bamako 2000 event and the Afrinet 2000 Internet Summit. A workshop for the Asian sub-region (Vietnam, Lao P.D.R and Cambodia) took place last October.

- Human Resources Development – training workshops have been organized in Latin America, notably in Chile, Venezuela and Brazil, as well as in Cameroon, Mali, Malaysia and the United Arab Emirates.
- The Secure Electronic Commerce Partnership Conference (WISWorld 2000) – organized by the ITU and WISKey, this took place last November and brought together more than 550 participants from 120 countries in an event where the latest in secure, trust and e-business technology were demonstrated by more than 50 leading security companies.
- Policies & Strategies – the ITU provides policy advice on the establishment of an

environment conducive to e-business. Presentations have taken place in Africa (Bamako 2000); Asia (CTO conference in Malaysia); United States (AFCOM '99); Latin America (ITU Telecom Americas 2000); the Middle East (ITU Regional Development Seminar, Egypt); in Geneva (IIR Conference); in Nigeria (Afrinet 2000); in the Sultanate of Oman (AMS/ICC E-business Conference) and in many other locations. Several events aimed at addressing policies and strategies are planned for 2001 in various regions of the world.

- Partnership and Financing – to date, industry partners have contributed more than US\$7m worth of in-kind contributions to the EC-DC project – plus sponsoring a training workshop for more than 100 countries, including full fellowships.

Very successful private sector meetings took place last June to increase the participation of the private sector in EC-DC and develop solutions – which, from the end of last October, were provided free to developing and least developed countries that are ITU member states and that fulfil the participation requirements.

### Conclusions

I could, I suppose, focus on the problems and barriers, but I prefer to look at the opportunities and benefits...

E-commerce will be a driving forces in bridging the digital divide. The emphasis and target for EC-DC is not start-ups or dot.coms, but to e-commerce-enable existing businesses so they can create new and efficient relationships with clients world-wide through secure, leading edge technologies.

E-commerce will give entrepreneurs a reason to invest in the telecommunication infrastructure, will stimulate economic and infrastructure development and will also go beyond conducting business. The PKI system being put in place will also be used for e-government, e-education

and e-health services.

True, restrictions on the use of strong cryptography and the absence of any legislative framework to support the use of such technologies are still some of the barriers. To resolve these, we've had offers from leading law firms with extensive experience in establishing the legal framework to e-commerce by directly assisting developing countries who wish to use these services.

Finally, the poor infrastructure in many developing countries is a problem often cited in publications and research: I believe that providing value-added services and an environment that will attract investment and break monopolies will drive infrastructure development.

Developing and least developed countries cannot afford to miss out on this digital revolution. Through the EC-DC initiative, the ITU is committed to make this happen – and with the support of industry, governments and the private sector, we can work towards building a truly global information society. 



#### About The Author

Alexander Ntoko's ITU e-commerce activities began in 1991 when he co-ordinated the design, development and implementation of their Internet and e-commerce services. He launched the EC-DC project at the end of 1997 and, appointed project manager, is running projects in all continents. Born in Cameroon, he holds both a B.Sc. and M.Sc. in computer and information sciences from the State University of New York – and you can contact him at: ITU, Place des Nations, CH-1211 Geneva 20, Switzerland – e-mail: [ntoko@itu.int](mailto:ntoko@itu.int); website: [www.itu.int/ecdc](http://www.itu.int/ecdc)