



WITFOR

WORLD INFORMATION
TECHNOLOGY FORUM
BOTSWANA 2005

GLOBAL EDITION



Organised by the International Federation for Information Processing

Hosted by the Government of Botswana

In collaboration with Botswana Information Technology Society

Under the auspices of UNESCO

Supported by the European Union



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BOTSWANA 2005

WORLD IT FORUM



LETTER FROM THE PRESIDENT

1 March 2005

Dear prospective World IT Forum sponsors and delegates,

Botswana is extremely proud and honoured to host the second World Information Technology Forum (WITFOR) in partnership with the International Federation for Information Processing (IFIP), and under the auspices of UNESCO, in August this year.

We look forward to welcoming you to our beautiful country, and to this most important conference.

The event, also sponsored by the European Union (EU), is hugely significant for Botswana and the rest of the developing world as it will identify concrete actions to accelerate development and reduce the digital divide. It will result in tangible projects that will lead to real benefits for our people and those of Africa.

Botswana has made huge strides in using information and communications technology (ICT) in our development agenda. Indeed, our country is a good example of a developing country making significant efforts to prepare for a meaningful role in the global knowledge economy.

We have a number of ongoing local and international ICT projects, all our secondary school pupils have good access to computers, and we have recently developed a national ICT policy.

However, we still have a long way to go. Countries like Botswana need to exploit ICT to the full, in areas as diverse as financial services, health, tourism and social services.

We recognise that investment in world class ICT infrastructure is not a luxury, but a development imperative. It is incumbent upon ourselves, the developing nations, to open up to the opportunities of becoming part of the information society. I believe that these efforts could be enhanced through partnerships with other nations.

This conference will enable us to work together to find new, creative ways to ensure that the spread of ICT promotes win-win partnerships on a global scale.

We hope that you will contribute to the success of this conference, while enjoying the sunshine and hospitality of Botswana.

Festus Gontebanye Mogae

President of the Republic of Botswana
Honorary Chairperson of WITFOR 2005



www.witfor.org.bw

WORLD INFORMATION TECHNOLOGY FORUM
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WORLD INFORMATION TECHNOLOGY FORUM (WITFOR) 2005

31 August to 2 September 2005

ICT FOR ACCELERATED DEVELOPMENT

The Government of the Republic of Botswana, in collaboration with the International Federation for Information Processing (IFIP) will host the second World Information Technology Forum (WITFOR) in Gaborone from August 31 to September 2, 2005.

WITFOR is a state-of-the-art, high-level international forum, aimed at ICT policy-makers and practitioners.

The purpose of the conference is to help implement information development strategies and projects in developing countries. Significantly, it will take the World Summit on the Information Society's (WSIS) Plan of Action a step forward, by converting policy statements to actual, implementable projects that should help developing countries to achieve the UN Millennium Development Goals.

The forum will address issues critical to developing countries, such as the application of ICT in fighting HIV/Aids, poverty, access to education, empowerment, environment, as well as social, ethical and legal consequences of IT. It will also showcase leading-edge ICT solutions for economic development, as well as best practice projects, from around the world.

The inaugural WITFOR was held in Lithuania, in 2003. This year's Forum, the second, will bring together more than 700 delegates, including ICT Ministers, senior policy-makers, academics, NGOs, ICT experts and the private ICT sector.



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ICT FOR ACCELERATED DEVELOPMENT

The theme of WITFOR 2005 is 'ICT for accelerated development'. Its specific objectives are:

- to find ways of utilising ICT for accelerated development, in line with the UN Millennium Development Goals and the WSIS Plan of Action; and
- to pay special attention to the needs of developing countries and assist them in accelerating development through the applications of ICT.

The conference takes place at the Gaborone International Conference Centre (GICC).

World IT Forum (WITFOR) Commissions and Themes

Preparation for WITFOR 2005 is being facilitated through eight worldwide Commissions of experts. They are working to transform the eight themes and associated projects, into tangible real undertakings.

The Commissions are reviewing developments, identifying best practices, and providing project proposals for implementation in developing countries to accelerate development.

The Commissions are currently receiving professional input, which will be part of the draft text for the Gaborone Declaration. This will be a document detailing projects and research activities that can be implemented in developing countries, some in partnership with developed countries, to accelerate development and bridge the digital divide.

The Declaration will be reviewed and finalised at WITFOR 2005. Following this, it will be submitted to the UNESCO General Conference 2005 and the World Summit on the Information Society, WSIS, 2005.

Efforts are also being made to identify resources for some of the projects that emanate from WITFOR. For example, the WITFOR Health Commission has already received funding from the European Union (EU) for a project, known as BEANISH (Building Europe Africa collaborative Network for applying IST in the Health care sector), within the context of health information system development, for implementation through international collaboration.

The outcome of each Commission will be presented in the Gaborone Declaration, and will include:

- a case study;
- a follow-on research proposal, that may be implemented at national level or through regional or international partnerships; and
- a project that promotes the use of ICT for accelerated development.

Each of the Commissions has three internationally recognised experts as co-chairs.



The Commissions cover the following themes:



WITFOR 2005
Building the infrastructure

Support an enabling and competitive environment for the necessary investment in ICT infrastructure;

Provide and improve connectivity for all places accessible to the public (schools, libraries, post offices, etc.); and

Develop and strengthen national, regional and international broadband network infrastructure.



WITFOR 2005
Health

Use of ICT to extend health care to remote and under-served areas;

Access to the world's medical knowledge; and

Monitor and control the spread of communicable diseases (in particular HIV/Aids).



WITFOR 2005
Social, ethical and legal aspects

Increase awareness in the ethical dimension of ICT;

The Information Society should be subject to universally held values, promote the common good and prevent abusive uses of ICT; and

Nations should work towards digital inclusion by providing affordable access to ICT by all.



WITFOR 2005
Economic opportunity

Promote the use of e-business models;

Stimulate private sector investment in e-business; and

Government support to SMME's entry into ICT e-business.



WITFOR 2005
Education

Develop policies to ensure that ICT is fully integrated in education and training at all levels;

Promote e-Literacy for all; and

Develop ICT-based alternative educational delivery systems (e-Learning) to achieve Education for All targets.



WITFOR 2005
Empowerment and participation

Devise appropriate universal access policies and strategies;

Develop cost-effective community user information systems;

Address the special requirements of marginalised groups; and

Develop affordable technologies.



WITFOR 2005
Environment

Use and promote ICT as an instrument for environmental protection and the sustainable use of natural resources.



WITFOR 2005
Agriculture

Using ICT in dissemination of knowledge and information, particularly to rural communities; and

Use of ICT to improve production.



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THE INTERNATIONAL FEDERATION FOR INFORMATION PROCESSING (IFIP)



The International Federation for Information Processing (IFIP) is a non-governmental, nonprofit umbrella organisation of national societies working in the field of information processing. It was established in 1960 under the auspices of UNESCO as a result of the first World Computer Congress held in Paris in 1959. IFIP's principal aims are to foster international cooperation, stimulate research and development, encourage education and disseminate information.

There are four international federations with which IFIP collaborates. These are IFAC (International Federation of Automatic Control), IMACS (International Association for Mathematics and Computers in Simulation), IFORS (International Federation of Operational Research Societies) and IMEKO (International Measurement Confederation).

IFIP's mission

IFIP's mission is to be the leading, truly international, apolitical organisation that encourages and assists in the development, exploitation and application of IT for the benefit of all people.

Principal elements

To stimulate, encourage and participate in research, development and application of IT and to foster international co-operation in these activities.

To provide a meeting place where national IT societies can discuss and plan courses of action on issues in our field that are of international

significance.

To promote international co-operation directly and through national IT societies in a free environment between individuals, national and international governmental bodies and kindred scientific and professional organisations.

To pay special attention to the needs of developing countries and to assist them in appropriate ways to secure the optimum benefit from the application of IT.

To promote professionalism, incorporating high standards of ethics and conduct, among all IT practitioners.

To provide a forum for assessing the social consequences of IT applications; to campaign for the safe and beneficial development and use of IT and the protection of people from abuse through its improper application.

To foster and facilitate co-operation between academics, the IT industry and governmental bodies and to seek to represent the interest of users.

To provide a vehicle for work on the international aspects of IT development and application, including the necessary preparation for the generation of international standards.

To contribute to the formulation of the programs for education and training needed by IT practitioners, users and the public at large.

www.ifip.org

WORLD IT FORUM (WITFOR) 2005 PROGRAMME

3 1st Aug – 2nd Sept 2005

Programme Highlights:

Plenary Sessions with keynote speakers from research communities, policy makers, politicians, and the private sector;

Best practice case studies and country experiences;

Commission discussions and formulation of Gaborone Declaration;

Minister's Round Table and Panel Discussion;

The road ahead to WSIS in Tunis.

**Please check the WITFOR website for updates
www.witfor.org.bw**



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VENUE AND ACCOMMODATION

Just a few minutes from the city centre of Gaborone, and 12 kilometres from the Sir Seretse Khama International Airport, lies the Grand Palm Hotel Casino and Convention Resort, which in the grand tradition of Botswana hospitality offers luxury accommodation, dazzling entertainment and world-class convention facilities in the form of the Gaborone International Convention Centre (GICC).

The GICC, venue for World IT Forum (WITFOR) 2005, is a state-of-the-art, multi-faceted convention facility, suited to the needs of international conferences.

Delegates to the conference can book accommodation at the adjacent Grand Palm Hotel for luxury accommodation, or the Metcourt, only a five minute walk away, for budget accommodation.

To book, e-mail info@grandpalm.bw or fax (+267) 391 2989, or refer to the web sites www.grandpalm.bw or www.metcourt.com

Gaborone also offers a number of other hotels for conference delegates. For further information, please email the WITFOR Secretariat at witfor@gov.bw or Titi Nyadza at tnyadza@gov.bw or (T) +267 3910384, (F) +267 3907236; or visit the World IT Forum (WITFOR) Web site at www.witfor.org.bw



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WORLD IT FORUM (WITFOR) 2005 REGISTRATION FORM

Please fill-in one form per person, and send it to the WITFOR Secretariat
Ministry of Communications, Science and Technology, P/Bag 00414, Gaborone, BOTSWANA
by fax to (+267) 3907236 or by e-mail to witfor@gov.bw

1. Personal data (Please use BLOCK LETTERS when completing this form)

Last/Family name: _____

Title(Mr/Ms/Dr/Prof/Hon): _____

First name: _____

Organisation: _____

Position: _____

Address: _____

City / postal code: _____

Country: _____

Telephone (Int'l format): _____

Fax: _____

E-mail address (required): _____

2. Type of delegate

VVIP/ Minister Speaker Participant IFIP official

Member of WITFOR Steering / Organising Committee or Commission co-chair Exhibitor

3. Commission of your interest

For logistical reasons, we kindly ask you to indicate one commission of your interest (i.e. the commission of which you are going to attend the parallel sessions).

1. Building the infrastructure 2. Economic opportunity 3. Environment 4. Health
5. Education 6. Agriculture 7. Social, ethical & legal aspects 8. Empowerment and Participation

Please write a short note indicating why you want to attend this Forum

A registration fee of Euro 100 is payable on arrival in Botswana as part of the registration formalities. Registered participants will have access to all conference sessions, be provided with lunch, coffee/tea & refreshments during the conference days, be invited to a cultural evening and have free access to the internet café.

Thank you for your interest and participation. After receipt of the completed form you will receive a confirmation. Information about travel arrangements, hotel accommodation, visa requirements and excursions (both around Gaborone and to the Chobe/Okavango Delta) and how to book these is posted on the WITFOR website www.witfor.org.bw or e-mail the WITFOR Secretariat for assistance.

Visit the Forum website frequently to obtain updated information about the Forum programme and social activities.



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SPONSORSHIP OPPORTUNITIES: WORLD IT FORUM (WITFOR) 2005

The World IT Forum (WITFOR) 2005 presents a valuable opportunity to market information and communications technology (ICT) products and solutions, and to showcase technology as a tool for development and economic growth.

More than 700 ICT professionals and decision-makers are expected to attend this year's Forum, representing a significant opportunity to engage with a high-level group of prospective customers.

In addition, technology and services will be required to support the various projects finalised at WITFOR 2005, opening up further business opportunities for the ICT and financial services industries.

Delegates, many of whom will be high ranking public sector decision-makers from SADC, Africa and beyond, may be well-disposed to organisations that have backed such a significant event.

WITFOR 2005 also provides the opportunity for networking between local, regional and global companies that are looking to expand into Africa. The potential for establishing strategic partnerships with such companies is vast.

Generous sponsorships and donations are invited to make WITFOR successful. Funds are required for the organisation of the Forum, for the extensive preparatory activities of the Commissions, to subsidise participants from developing countries, and to kick-start ICT projects.

Apart from a financial contribution by the Botswana Government, the major sources of revenue for this event will be contributions by the local ICT community, European Union, UN organisations, and sponsorships by multi-national corporations.

Sponsors are offered different levels of publicity at the conference depending on the level of sponsorship. Major sponsors will have their names and logos distinctively displayed on the Conference web site, as well as in Conference brochures, and will be allocated an exhibition position at the Conference venue.

Interested organisations, companies and individuals should please contact the WITFOR Secretariat at witfor@gov.bw or Titi Nyadza at tnyadza@gov.bw or (T) +267 3910384, (F) +267 3907236.

Sponsorship Options

Diamond sponsors

Donation of € 150 000 (US\$ 180 000) or above

- Banner on the web site
- Name/logo mentioned on web site (distinctively)
- Name/logo mentioned in brochures (distinctively)
- Marketing information (limited) in delegate satchel
- Exhibition booth (large)

Gold sponsors

Donation of € 100 000 (US\$ 120 000)

- Name / logo mentioned on website (prominently)
- Name / logo mentioned in brochures (prominently)
- Exhibition booth

Silver sponsors

Donation of € 50 000 (US\$ 60 000)

- Name / logo mentioned on website
- Name / logo mentioned in brochures
- Exhibition booth (small)



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Bronze sponsors

Donation of €10 000
(US\$ 12 000)

- Name / logo mentioned on website
- Name / logo mentioned in brochures

Botswana Agate sponsors

Donation of €1 000
(US\$ 1200)

- Name and website address in the program brochure listing.

Tiger eye sponsors

Donation of €500
(US\$ 600)

- Name and website address in the program brochure listing

Supporters/partners

These are institutions and organisations involved in preparation of WITFOR who may also be sponsors.

- Name / logo mentioned on website
- Name / logo mentioned in brochures
- Participation in (one or more of) the Commissions
- They may also agree to render some services to WITFOR, such as promotion or free advertising.

Donors

These are individuals and organisations who donate to WITFOR to promote activities in developing countries.

- Names and amount donated will be listed on website.

Contributions

The WITFOR organisers are also looking for other contributions in kind, such as:

- Delegate satchels
- Secretariat support
- Brochures and flyers
- Website development
- Conference administration
- Social events
- Lunches and breaks
- Travel and accommodation of invited/keynote speakers
- Travel and accommodation of commission co-chairs
- Local transport services
- Sponsorship of delegates from developing countries
- Printing of final Gaborone Declaration
- Distribution of final Gaborone Declaration
- Souvenirs for speakers
- Conference facilities, such as complimentary IP phone, internet café, badges
- Video conferences
- Web-cast services

Sponsorship Agreement

- Agreements will be signed with all sponsors indicating cash and/or services given. The name of the sponsor will be announced only when cash is deposited in the WITFOR bank account.
- Donors' names will be published, and a list added to the web site, only when donations are received.
- Sponsors will need to submit a good quality logo in digital form.



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BOTSWANA FACT SHEET

Botswana is a cosmopolitan, peaceful democracy, boasting a stable macro-economic environment conducive to growth, diversification and foreign investment.

The country has developed dramatically since gaining independence in 1966, when it was classified as one of the 25 poorest in the world. Today it is the economic success story of Africa, recognised as one of the best performing small economies in the world. It is a progressive, prosperous young nation, richly blessed with natural resources that make it an outstanding tourism destination.

Its impressive economic growth is largely due to Botswana's exploitation of its vast mineral resources, notably diamonds, combined with far-sighted government policies. Mining revenues have been specifically invested to develop the national infrastructure as well as to enhance education, health, housing and other social services, dramatically improving the standard of living of Botswana.

Continued growth has been sustained through strong commitment to maintaining macro-economic stability, implementation of economic liberalisation policies, and a concerted effort to diversify the economy.

Government's policies and programmes continue to position Botswana to become a productive and innovative nation - in line with the country's long-term national vision, Vision 2016: 'Towards prosperity for all'.

The 2002 Index of Economic Freedom, released by the United States-based Heritage Foundation, rates Botswana's economy as the freest in Africa. In both 2001 and 2002, international credit rating agencies Moody's and Standard & Poors awarded Botswana the highest investment grade sovereign credit rating in Africa. The country was also rated the least corrupt in

Africa, by Transparency International's 2002 corruption perception index, as well as the top country in Africa in terms of good governance, by the World Economic Forum in June 2003.

With a per capita income of about \$3 500, Botswana now enjoys Middle Income Country status in the IMF/World Bank ratings.

The United Nations Development Programme's (UNDP) human development index, which measures achievements in terms of longevity, knowledge and a decent standard of living, rated Botswana fourth in Africa during 1998. Huge strides have been made in reducing gender inequalities in education enrolment, employment and politics. However, while Botswana still ranks high in Africa, with adult literacy rising to more than 77 percent, recent UNDP reports indicate that reversals in this development trend have taken place due to HIV/Aids. (UNDP Human Development Indicators 2002). Together with problems of unemployment and poverty, HIV/Aids has strained Government budgets as well as the human resources needed to develop the country. Early in 2002, Botswana became the first African country to offer free Antiretroviral (ARV) therapy to everyone through the public health system.

Key facts

Head of State - President Festus Mogae

Population - 1.736 million (2002)

Urbanisation - 46%

Capital City - Gaborone: 186,007 (2001)

Languages - English and Setswana

Government - multiparty democracy, with elections held every five years



Economic Indicators (2002)

| | |
|--------------------------|---|
| Currency | Pula (P) = 100 thebe |
| Exchange Rate | P6.320 = US\$1 |
| GDP | US\$4.854 billion |
| GDP per Capita | US\$2,796 |
| Exports | US\$1.16 billion (2000) |
| Imports | US\$1.02 billion (2000) |
| Principal Exports | Diamonds, Copper-Nickel, Beef, Soda Ash |
| Principal Imports | Machinery and Transport Equipment, Food and Beverages |
| Main Export Destinations | EU, SACU, Zimbabwe |
| Main Import Origins | SACU, EU, Zimbabwe |
| Literacy | 68.3% (1993) |
| Natural Resources | Diamonds, Copper, Nickel, Cattle, Wildlife |

Source: SADC Secretariat.

Geography

Botswana is a completely landlocked country in the centre of Southern Africa. It is bordered by Namibia to the west, Zambia and Zimbabwe to the northeast, and South Africa to the south.

The country covers an area of about 582,000 sq km and is roughly the size of France or Kenya. The climate is semi-arid with mild winters and hot summers.

People

The population of 1.736 million (2002) includes several ethnic groups, dominated by those who are

Setswana-speaking, all of which are known as Batswana. About 80 percent of the people live in the eastern regions of the country. Setswana is the national language, while English is the official medium used in business and most government affairs.

Gaborone

Located in the south east of Botswana along the Notwane River, Gaborone was chosen as the country's capital in 1966 due to its proximity to the railway line and the availability of water.

Gaborone is a modern city boasting world class shopping malls and office parks. Residential areas have



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mushroomed during the past three decades trying to cope with a fast growing population of 186,007 (2001).

The city is home to numerous industrial activities and is well supplied with good quality hotels, conference facilities, and two casinos.

Served by the Sir Seretse Khama International Airport some 15 kilometres from the centre, regular flights connect Gaborone with Johannesburg (South Africa) and Harare (Zimbabwe). The railway line links Gaborone with Lobatse in the south and Francistown in the north. Gaborone also has a well-developed road network linking it to neighbouring countries and to other parts of Botswana.

The Economy

Botswana's impressive economic performance over the past three decades is mainly due to the success of the export sector. This sector is dominated by diamond mining, which during the 1990s contributed on average

35 percent to GDP, accounted for 82 percent of export earnings, and made up 53 percent of government revenue.

Government policy aims to reduce the vulnerability from this dependence on diamonds by diversifying the export base, and promoting growth and development of non-mining sectors.

The government aims to position Botswana to compete effectively in global markets by adjusting its economic structure and institutional framework to take advantage of opportunities offered by globalisation. Various programmes, policies and strategies are being implemented to drive the economy, including provision of requisite infrastructure, maintaining a conducive macro-economic policy regime for private sector initiatives, and increasing labour productivity through human resources development.

Foreign Reserves (US\$ m; year-end)

| | 1998 | 1999 | 2000 | 2001 | 2002 |
|---------------------------|---------|---------|---------|---------|------|
| Total reserves excl. gold | 5,940.7 | 6,298.7 | 6,318.2 | 5,897.3 | |

Source: IMF, International Financial Statistics.

Exchange Rates (period averages)

| | 1998 | 1999 | 2000 | 2001 | 2002 |
|---------|-------|-------|-------|-------|-------|
| P: US\$ | 4.226 | 4.624 | 5.102 | 5.841 | 6.320 |

Sources: IMF, International Financial Statistics; Bank of Botswana.



Business and Investment Environment

Botswana offers significant investment opportunities in a number of sectors that the government has identified as areas of priority for stimulating growth, expansion and diversification of the economy.

It aims to reduce the contribution of diamonds to the economy from 80 percent to about 30 percent, with financial services, information technology, telecommunications and tourism making up the difference.

Botswana's prudent management of the economy and predictability of policies, as well as low tax rates, continue to generate private sector interest and enthusiasm.

The government has been pro-active in promoting export growth and diversification through tax and

investment incentives, and the abolishment of exchange control regulations in February 1999.

Botswana's strong financial base led to an establishment of an International Financial Services Centre (IFSC), the first of its kind in Africa, and one of only three in the world. The IFSC offers foreign investors a 15 percent corporate tax rate that is guaranteed until June 2020. Other benefits include exemption from withholding taxes, provision of credits for withholding taxes levied in foreign jurisdictions, access to Botswana's Double Taxation Treaty network and no foreign exchange or capital controls.

The aim of the IFSC is to attract to Botswana those companies that are currently operating, or intend to operate, in Africa.

The Botswana Export Development and Investment Authority (BEDIA) was established in 1997 to promote foreign direct investment into the country,

| Gross Domestic Product | | | | | |
|-------------------------------|---------|---------|---------|---------|---------|
| | 1997/98 | 1998/99 | 1999/00 | 2000/01 | 2001/02 |
| Total (P m) | | | | | |
| At current prices | 20,163 | 21,524 | 24,943 | 28,671 | 32,000 |
| At constant (1993/94) prices | 13,729 | 14,296 | 15,451 | 16,524 | 16,912 |
| Real change (%) | 8.1 | 4.1 | 7.7 | 8.4 | 2.3 |
| Per head (P) | | | | | |
| At current prices | 12,879 | 13,413 | 15,165 | 16,993 | 18,521 |
| At constant (1993/94) prices | 8,769 | 8,909 | 9,394 | 9,793 | 9,788 |
| Real change (%) | 5.4 | 1.6 | 5.1 | 5.7 | -0.1 |

Sources: Bank of Botswana; Central Statistics Office.



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with special emphasis on export-oriented manufacture and services. The country's judiciary system is one of the best in the world, ranked as 11th in the world according to the World Economic Forum, Global Technology Report 2003-2004.

Botswana's unique investment climate

- Botswana is a stable democracy with an excellent track record.
- The country has recorded the highest growth rate in the world, above 13% from 1970 to 1990. The economy grew by 9.1 percent in 2001/2002.
- Botswana's credibility and credit worthiness rating by Standard and Poor's and Moody's is higher than any other sub-Saharan African country.
- Botswana is the most transparent country on the African continent according to Transparency International.
- There is a well-developed legal system based on Common Law, which facilitates business and commercial activities.
- Botswana has the highest (per capita) foreign exchange reserves among the developing world (US\$ 6 billion), representing 39 months import cover.
- There are no foreign exchange controls in Botswana, and profit, dividends and capital can be readily repatriated.
- Botswana was ranked number one for good governance in Africa by the World Economic Forum in June 2003.
- The Africa Growth & Opportunity Act (AGOA) of the United States offers new opportunities for duty free and quota free access to the US market.
- Botswana has acceded to international conventions and is strictly observing internationally accepted guidelines on combating money laundering and financial crime.
- Transparency International, in its Corruption Perceptions Index of 2003, rated Botswana to be the least corrupt country in Africa, and 24th least corrupt in the world on this score.
- Botswana has consistently invested a high proportion of its budget on education and skills training.
- Corporate tax is only 15 percent (for manufacturing companies and those approved to operate under the IFSC scheme) and 25 percent for non-manufacturing companies.
- Botswana offers duty- and quota-free access to the EU market through the Cotonou Agreement. Botswana is also a member of the Southern African Customs Union (SACU), an economic grouping free of tariffs which includes South Africa, Namibia, Lesotho and Swaziland.
- Botswana is also a member of the Southern African Development Community (SADC), and serves as its headquarters. The SADC Trade Protocol allows preferential access to the markets of 14 Southern African countries, or 200 million people.
- The country has a thriving domestic financial sector, which includes banks, insurance companies and a growing stock market.
- A strong fund management and venture capital expertise that can provide strategic partnerships for those seeking to establish a base in Africa
- Botswana has invested in a world-class multi-service telecommunications system that facilitates remote provision of services.
- Botswana's judiciary system is ranked as 11th in the world according to the World Economic Forum, Global Technology Report 2003-2004.



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THE SOUTHERN AFRICAN DEVELOPMENT COMMUNITY (SADC)

The Southern African Development Community (SADC) is an alliance of 13 countries that exists to meet the region's social, economic as well as political needs, and enable it to speak with a united voice.



SADC goes beyond regional cooperation to focus on sectors that will enhance regional integration as well as foster economic and social development. These include trade, transport, information and communication technologies, as well as energy and water resources.

The grouping has been in existence since 1980, when it was formed as a loose alliance of nine states in Southern Africa known as the Southern African Development Coordination Conference (SADCC). Its main aim was to coordinate development projects to lessen economic dependence on the then apartheid South Africa.

In 1992, the organisation was transformed from a Coordinating Conference into a Development Community (SADC). The member states are Angola, Botswana, Democratic Republic of Congo, Lesotho, Malawi, Mauritius, Mozambique, Namibia, South Africa, Swaziland, United Republic of Tanzania, Zambia and Zimbabwe.

The current SADC chairperson is Mauritian Prime Minister Paul Berenger; and vice-chairperson is Botswana President Festus Mogae. SADC headquarters are in Gaborone, Botswana.

SADC's vision is one of a common future; a future in a regional community that will ensure economic well-being, improvement of the standards of living and quality of life, freedom and social justice and peace and security for the peoples of Southern Africa. This shared vision is anchored on the common values and principles as well as the historical and cultural affinities that exist between the peoples of Southern Africa.

Its objectives are to:

- achieve development and economic growth, alleviate poverty, enhance the standard and quality of life of

the people of Southern Africa and support the socially disadvantaged through regional integration;

- evolve common political values, systems and institutions;
- promote and defend peace and security;
- promote self-sustaining development on the basis of collective self-reliance, and the interdependence of member states;
- achieve complementary status between national and regional strategies and programmes;
- promote and maximise productive employment and utilisation of resources of the region;
- achieve sustainable utilisation of natural resources and effective protection of the environment; and strengthen and consolidate the long-standing historical, social and cultural affinities and links among the people of the region.

Underscoring all these objectives is the need to address poverty alleviation in all SADC activities, with the ultimate objective of eradicating it. HIV/Aids is a major threat to the attainment of SADC's objectives, and is accorded priority in all SADC programmes and activities.

The Future

Prospects for SADC countries are encouraging. Implementation of the SADC Trade Protocol has led to a SADC-wide free trade area, which is expected to encourage increased intra-regional trade. It will also create opportunities for new investments, while increasing integration of the region into the world economy. The Protocol allows preferential access to the markets of the 14 southern African countries, or 200 million people.

Current organisational restructuring of SADC is expected to improve its efficiency in the delivery of programmes and projects, and, most importantly,



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THE SOUTHERN AFRICAN DEVELOPMENT COMMUNITY CONTINUED

enhance the investment climate in the region for sustainable economic growth and socio-economic development.

A Regional Indicative Strategic Plan (RISDP) has been prepared to provide strategic direction to the organisation. Launched last year, it is a strategic framework for deeper economic integration and social development in the SADC Region. Among others, the plan recognises the importance of ICT as a resource for development and regional integration.

The Strategic Indicative Plan for the Organ (SIPO) seeks to strengthen peace, political stability and security in the region and beyond.

The region is at the epicentre of the HIV/Aids scourge. The HIV/Aids Framework and Programme of Action, 2003 – 2007, is SADC's clarion call for action – nationally and regionally. It offers measurable targets against which efforts, action and successes will be measured.

The Directorate of Trade, Industry, Finance and Investment (TIFI) was launched in August 2001 to facilitate trade as well as economic liberalisation and development. This will hopefully lead to deeper regional integration and poverty eradication, as well as the establishment of the SADC common market.

SADC is one of the key pillars of the New Partnership for African Development (NEPAD), Africa's decision to shape its own destiny.

SADC and ICT (Information and Communications Technology)

The effective use of ICT can significantly accelerate development in developing countries, which tend to lie on the wrong side of the great digital divide.

SADC countries need to use ICT at the centre of programmes to fight poverty and disease. ICT tools should be speeding and enhancing delivery in the vital areas of health care - for example disseminating information on HIV and Aids, education and government services.

Increased accessibility of ICT in Southern Africa would also be a big step towards creating a well-informed society that can promptly respond to development issues.



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OVERCOMING THE DIGITAL DIVIDE

The Status of Information and Communications Technology (ICT) in Botswana

Botswana has long recognised that the country must prepare itself to play a meaningful role in the knowledge economy and is making significant efforts in the ICT arena. The country recognises the huge potential of ICT applications to foster economic diversification.

The national manifesto, Vision 2016, is a statement of long-term goals together with strategies to meet them. ICT is a key component of the first goal, which is to be an educated, informed nation.

The long-term vision is that Botswana will enter the information age on an equal footing with other nations. The country will have sought and acquired the best available information technology, and become a regional leader in the production and dissemination of information.

ICT is also a major focus of the country's economic agenda, National Development Plan 9 (NDP9) and significant investment has recently been made in upgrading Botswana's communications networks to facilitate new technologies. In 2002, Botswana established a government Ministry dedicated to ICT, the Ministry of Communications, Science and Technology.

Challenges

Botswana's ICT infrastructure is very good, but is not fully utilised. Internet usage, for example, stands as low as five percent of the population. There is also considerable disparity in terms of urban and rural access to ICT services.

Challenges include the relatively high cost of PCs, the lack of electricity in many rural locations and high telephone bills for Internet usage. In addition, the

Internet needs to be made more relevant to Botswana, through the development of local online content tailored to the needs of the population.

ICT is still not widely exploited by business in Botswana, although it is used extensively in the retail and mining sectors, but almost exclusively within foreign-owned businesses

Botswana's ICT sector itself is small, and generally focused on local market opportunities.

Meeting the challenge

To help address these challenges, Government has recently introduced a new national ICT policy, as well as a number of initiatives. Its e-government initiative will bring services closer to the people, and hopefully also act as a catalyst for the public as well as the private sectors to embrace ICT.

In addition, efforts are being made to reduce communications costs in Botswana, mainly through further liberalisation of the telecommunications industry. This should create more competition and ultimately result in lower tariffs for the consumer.

Cognisant of the need for a strong research, science and technology (RST) capability to create a knowledge society, Government is in the process of restructuring existing RST institutions to better leverage scarce expertise and improve coordination of research efforts. As part of this exercise, a central research fund is being established and there are plans to establish a cluster of research institutions.

On the education front, all government tertiary learning institutions in Botswana are well equipped with Internet-enabled computers. All junior secondary



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OVERCOMING THE DIGITAL DIVIDE CONTINUED

schools (year eight to 10 of basic education) and all senior secondary schools have fully equipped computer laboratories. The Government is currently working on networking these to enable them to link to the Internet. Government is planning a project to give primary schools refurbished, used equipment from the government and the private sector. An e-Learning programme is also being formulated.

Current ICT Projects

National telecommunications network upgrade

Government has committed US\$60 million to rehabilitate and fortify the national telecommunications network. An additional US\$60 million is being mobilised to provide high capacity international connectivity through undersea cables off the east and west coasts of Africa.

Rural telecommunications initiative

At the end of its first phase in 2004, the rural telecommunications initiative brought modern telecommunications, including Internet access capability, for the first time to 147 villages. When fully implemented, the P125 million project will ensure that more than 50 percent of Botswana living in the remote areas of the country will be provided with basic telecommunications services. This is a major step forward, which should stimulate economic activity and improve people's lives.

Community information at the touch of a button

Botswana Technology Centre (BOTEC) is piloting a community user information system to bridge the digital divide between rural and urban dwellers. The system comprises an on-line computer network linking three rural communities to Gaborone. The centres provide rural communities with access to Internet-

based information and communication services, as well as local information on health, education and business. It will be expanded to include basic services such as downloadable application forms for everything from drivers' licenses to bank loans.

The Centres will also provide small business services and offer basic computer awareness lessons. Following the pilot project, the programme will be rolled out to the rest of the country.

V-Sat technology

Botswana Telecommunications Corporation (BTC) launched V-Sat technology (Very Small Aperture Terminal) which, it is hoped, will play a role in bringing services to remote areas through the use of satellite – overcoming limitations placed on traditional services by vast distances and difficult terrain. The technology will bring significant benefits to the tourism industry, isolated farming communities as well as government and parastatal organisations.

BTC Fibre Optics projects

During 2005, the Gaborone and Francistown metropolitan areas will have extensive fibre networks servicing all business and industrial sectors. In addition, BTC will provide dedicated fibre rings, interconnecting all major buildings in the Gaborone government enclave.

An optical fibre link has been introduced between the southern and eastern corridors of the country between Gaborone and Francistown. Others are planned, bringing high-quality fixed line links to the entire country.

Work is progressing on the introduction of a complete fibre optic 'ring' around the country which will enhance the quality of international connectivity. It is scheduled for completion by 2006.



Connectivity to South Africa has recently been complemented by the 'Tlokweng fibre' allowing BTC to transport traffic from neighbouring countries into South Africa.

Global connectivity is being addressed by shifting primary communication from satellite to fibre-optic systems. A partnership has been established with British Telecomm (BT) to hub Internet and packet connectivity into London.

ICT in health care

Without reliable, relevant information, health care managers and providers cannot optimally allocate resources, improve the quality of health services or address epidemics such as HIV/AIDS.

The last decade has seen an increasing recognition of the need to strengthen the informational basis of health care delivery through the application of Information Society Technologies (ISTs). The HIV/AIDS pandemic together with the generally poor health status and health systems have emphasised the need for developing and applying appropriate IST for managing, monitoring and delivering health services.

BEANISH (Building Europe Africa collaborative Network for applying IST in the Health care sector) is an international partnership project to be launched at WITFOR 2005. The project addresses these issues by building an Europe-Africa network where the resource and experience base of South Africa, best practices from African countries and the strong European research base in the application of IST in health come together to share and build appropriate African IST solutions and know-how.

ICT has proved to be invaluable for public health care delivery in Europe. Existing solutions and know-how,

however, cannot simply be transferred to Africa. These need to be sensitively reworked and appropriately translated to the African context, given differences in infrastructure, economy, human resources and culture.

BEANISH is funded by the European Union (EU). The EU, which has donated substantial funds towards the WITFOR conference and to e-health projects in six African countries; seeks to strengthen cooperation as well as learning between Europe and Africa, within the context of health information system development. The partners involved are Norway, Sweden, South Africa, Botswana, Mozambique, Tanzania, Malawi and Ethiopia.



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MAITLAMO: BOTSWANA'S INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT) DRAFT POLICY

Botswana's Draft ICT Policy provides a clear, compelling roadmap to drive social, economic, cultural and political transformation through the effective use of ICT.

The Draft Policy, known as Maitlamo, complements and builds upon Botswana's Vision 2016, and provides many of the key strategies essential for achieving Botswana's national development targets.

Vision

Botswana will be a globally competitive knowledge and information society where lasting improvements in social, economic and cultural development is achieved through effective use of ICT.

Objectives

- Creation of an enabling environment for the growth of an ICT industry in the country;
- Provision of universal service and access to information and communication facilities in the country; and
- Making Botswana a regional ICT Hub so as to make the country's ICT sector globally competitive.

Botswana has invested heavily in telecommunications infrastructure in recent years and already has a number of ICT-related initiatives underway. Good levels of technical infrastructure and supporting legislation are already in place and provide Botswana with a solid foundation for accelerating an integrated national ICT agenda.

Enhancements in infrastructure and supporting legislation will allow for improvements in electronic interaction and online service delivery. However, ICT-driven innovation in education, as well as major skills development programmes, will be necessary to enable long-term sustainability, economic diversification and national growth.

Highlights of the National ICT Draft Policy include:

Connecting Communities Programme

Hundreds of Community Access Centres will be established throughout the country. These access centres will provide citizens who do not have computers and Internet access at home with an 'on-ramp to the Information Superhighway.'

Centres will be tailored to the specific needs of the community and will provide access to information and services relating to healthcare, jobs, education and government services. Far more than an Internet café, these sites will offer training, education and assistance to the community and ensure that local residents learn to use ICT for maximum social, cultural and economic benefit. Training in business start-up and e-Business will also be provided to local companies and entrepreneurs.

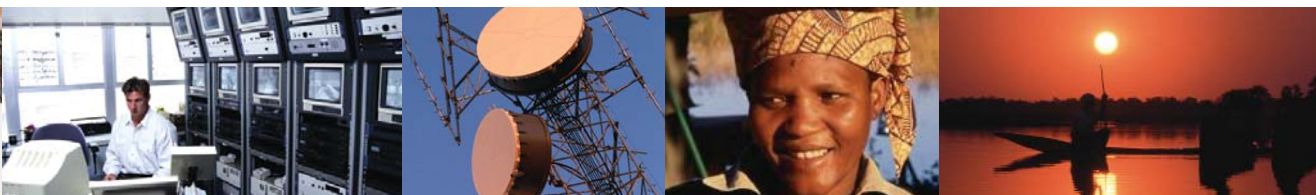
This will be a phased project, with all communities over 2000 inhabitants connected to high speed network access by 2016.

Government on Line

This programme will make all appropriate government information and services available electronically. It is to be fully implemented across all segments of society by 2009.

SchoolNet Botswana

This programme aims to provide the literacy, skills and knowledge required for both formal and non-formal learners in the networked world. The programme will provide all schools in Botswana with modern computers and access to the Internet. All teachers will be trained how to use ICT as a classroom tool, and formal ICT education will be introduced into the school curriculum to help prepare the nation's children for success in the digital age. Locally developed educational software will be produced to assist with e-Learning and ensure local content and subject relevance.



The programme will be fully implemented by 2010, with a 1:7 computer to student ratio in all schools by the end of 2012.

eHealth Botswana

This programme will introduce a number of ICT initiatives aimed at improving the health of Botswana and improving the overall efficiency and effectiveness of the healthcare system. Simple applications such as a healthcare Portal and improving health related information delivered over the radio and television will provide rapid benefits. Over time, more sophisticated solutions such as Telehealth (healthcare advice provided over the telephone) and Telemedicine (healthcare services provided over the Internet) will be introduced.

ICT and Economic Diversification

The strategy for enhancing the ICT sector in Botswana will be focused on the further development of the Botswana International Financial Services Centre (IFSC) and positioning the country as an attractive location for Business Process Outsourcing investment. In addition, traditional industries such as agriculture, mining, manufacturing and tourism will benefit from the introduction of ICT into ongoing operations. This programme, in conjunction with the Community Connection and Government on Line initiatives will also focus on training and assistance to SMEs to provide them with the necessary tools or moving their businesses online and using the Internet as a vehicle for increasing productivity and sales.

Connecting Botswana

This programme will assist in the design and deployment of an enabling technical infrastructure for Maitlamo. It will provide adequate, affordable, reliable and sustainable ICT infrastructure solutions to enable full connectivity to homes, communities and establishments, and the delivery of health, education, public services and e-Commerce solutions to everyone in the country. The initiative will identify the technical

requirements to support the roll-out of Maitlamo and develop a 'future-looking plan' to ensure that the country's ICT infrastructure is constantly evolving and improving. Providing electricity and Internet access for remote and rural communities is of particular importance to ensure equity and universal access, and will be a key focus of this programme. The target for ensuring that access to ICT technologies is available to all citizens is the year 2016.

Connectivity Laws and Policy

Supporting legislation is as important as supporting infrastructure. Key will be developing the necessary legal environment for increased levels of competition within the telecommunications space. In addition, the e-Legislation initiative will develop policies that enable increased levels of e-Commerce and e-Government, examining areas such as electronic signatures, privacy, security, and intellectual property rights.

New opportunities

The National ICT Strategy has been designed to provide all Botswana with exciting new opportunities for learning, developing skills, and receiving important information and services – at any time from anywhere.

The plan is complete. The roadmap has been laid out. Although the challenge is significant, the tasks are clear and achievable. Botswana has an unprecedented opportunity to chart a new and exciting future for its children. A future filled with countless opportunities and few boundaries.



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BOTSWANA AS A REGIONAL ICT HUB

With its political and economic credentials, developed banking and financial services sector, perfect location at the crossroads of southern Africa, and good communications infrastructure, Botswana is ideally positioned as a regional ICT hub.

The country offers a range of tax and other economic incentives to attract foreign investment. It is ideally placed for those eyeing the SADC region as a prospective market, as well as those wanting to take advantage of opportunities of exporting to overseas markets through preferential trade agreements like the Cotonou Agreement and the Africa Growth and Opportunity Act (AGOA) of the US. Botswana's judiciary system is also one of the best in the world, ranked as 11th in the world according to the World Economic Forum, Global Technology Report 2003-2004.

Botswana is a member of the Southern African Customs Union (SACU), as well as the Southern African Development Community (SADC), which is headquartered in its capital.

Gaborone, is less than an hour by air from Johannesburg, South Africa, with several commuter flights daily in both directions operated by two carriers.

Financial services

Botswana is ideally placed as a gateway for cross-border financial services in Africa and farther afield.

It adheres to open market economic norms and offers a good telecommunications infrastructure. It has a well-educated and trainable workforce, as well as a recognised world-class legal system. Botswana encourages investment, freeing it from unnecessary bureaucratic obstacles.

The Botswana International Financial Services Centre (IFSC) is a world-class professional vehicle for financial services companies. It positions Botswana as a hub for cross-border financial services, as well as a regional gateway for capital and investment flows. It presents services and solid business opportunities in Botswana, and as a gateway to the huge potential of the wider African market.

Information and Communications Technology (ICT)

One of the major focus areas of Botswana's national ICT policy is to ensure that Botswana becomes a sub-Saharan ICT Hub.

The government is in the process of liberalising and enhancing regulation of the communications industry in a bid to attract investment as well as encourage innovation and competition. It aims to provide a communications network that meets high international standards, and ensure the country has the skills to be an ICT leader.

Telecommunications

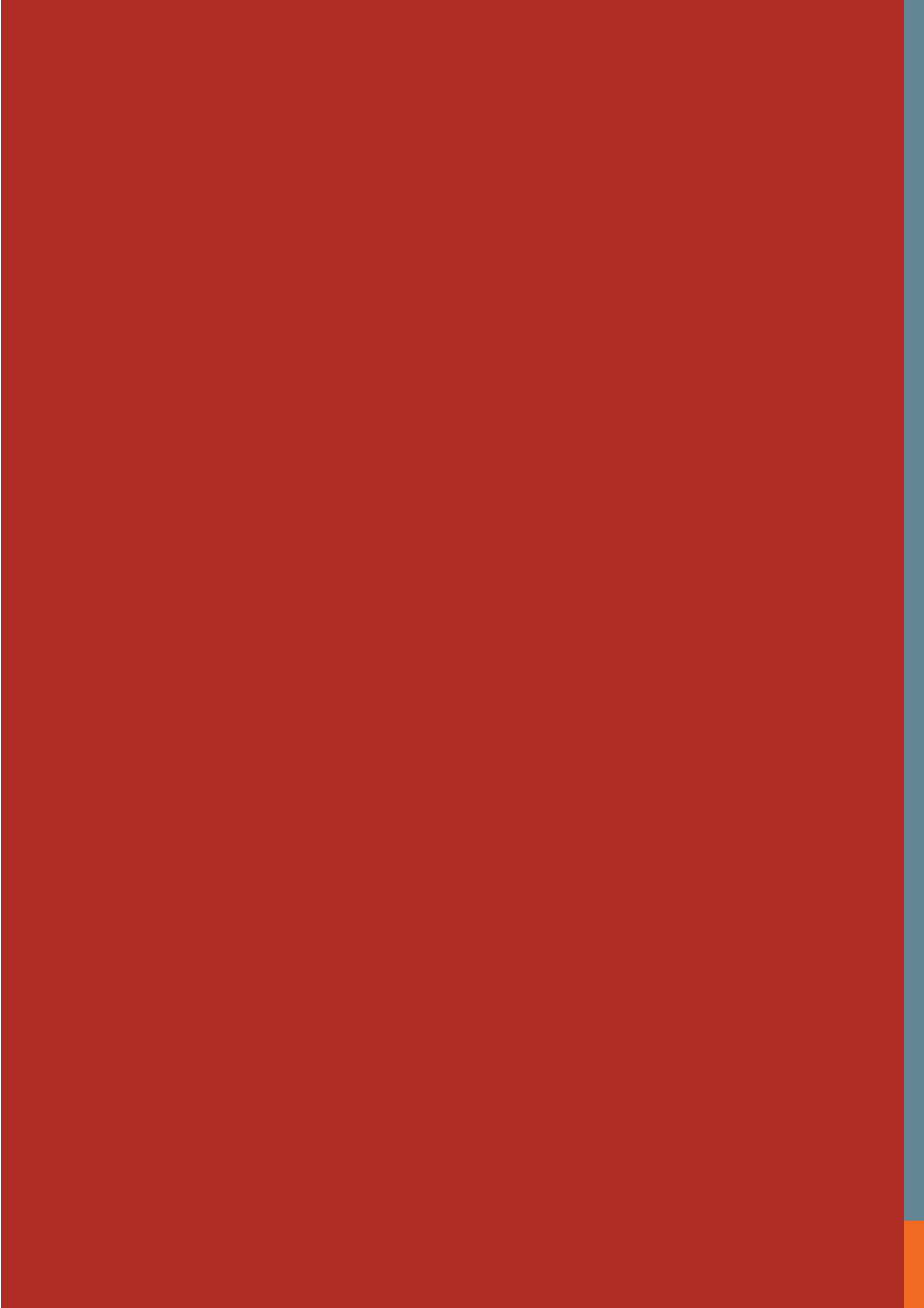
Botswana's tele- and data communications infrastructure, already good, is being further upgraded to enhance capacity and international connectivity.

The Botswana Telecommunications Corporation (BTC) is working with the Ministry of Communications, Science & Technology on plans for major improvements in connectivity and the development of ICT in Botswana.

The aim is to establish BTC as a regional traffic hub, and these plans involve cooperation with telecommunications operators in South Africa, Namibia, Angola, Zambia and Tanzania.

BEDIA

Since its establishment, the Botswana Export Development and Investment agency, BEDIA, has been actively marketing Botswana in markets such as the United Kingdom, India, Mauritius and the United States of America. The organisation envisages Botswana becoming the gateway to Sub-Saharan Africa through its service sector and enabling legislation.





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World Information Technology Forum (WITFOR)

Organised by the International Federation
for Information Processing

Under the auspices of UNESCO

Hosted by The Government of Botswana

In collaboration with the Botswana
Information Technology Society

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IFIP World Information Technology Forum 2005

Gaborone Declaration

IFIP World Information Technology Forum 2005

Gaborone Declaration

We, the participants at The Second World Information Technology Forum (WITFOR 2005), organised by IFIP under the auspices of UNESCO and hosted by the Government of Botswana, gathered in Gaborone, Botswana, 31 August – 2 September 2005, focused on the crucial role of ICT in accelerating development. We reaffirm our commitment to the following major goals, guided by the Millennium Declaration and the WSIS Plan of Action:

- Contributing to the eradication of poverty through the appropriate use of ICT
- Bridging the multiple digital divides of contemporary society
- Addressing the need for creative capacity-building strategies towards ICT innovation
- Encouraging diverse partnerships and promoting collaborative networks

We the participants at WITFOR 2005, building on the experience of WITFOR 2003, and

- *Aware* of the complexity facing national governments in translating ICT policies and plans into action
- *Acknowledging* constraints of developing countries to acquire and utilize ICT technology resources
- *Recognising* the value of demonstrating the potential of ICT through real life examples
- *Subscribing* to the importance of education, research and cooperation to build a body of knowledge on the use of ICT for development
- *Conscious* to the importance of ensuring that ICT-related interventions respect economic, social, environmental and cultural rights of all people, with special attention to traditional values of societies and indigenous people
- *Believing* in equitable and ethical sharing of the benefits of ICT and the minimization of any negative impacts
- *Fully* accepting challenges of financing ICT infrastructure

We therefore resolve to focus mainly, though not exclusively, on eight thematic concerns:

- **Agriculture:** Using ICT to improve sustainable agricultural production systems by disseminating knowledge and information, particularly to rural communities.
- **Building Infrastructure:** Supporting research, development and economic analysis for enhanced ICT infrastructure in underserved areas.
- **Economic Opportunity:** Exploring appropriate scalable, replicable e-business models that promote sustainable development
- **Education:** Promoting innovative and effective methods to exploit ICT to improve teaching, learning and knowledge generation.
- **Empowerment and Participation:** encouraging universal access strategies, e-government and e-democracy to enable participation in the information society.
- **Environment:** using and promoting ICT for environmental protection and the sustainable use of natural resources.
- **Health:** Using ICT to improve the efficiency and equity of health service provision
- **Social, Ethical and Legal Aspects:** promoting socially responsible and ethical use of ICT and taking appropriate legal measures.

We recommend that action is taken on each of these areas and that sustainable projects are implemented such as those indicated in the **Proposed Actions & Projects** that illustrate applications of ICT to diverse social and development challenges. We further invite national governments, parliamentarians, local authorities, civil society, the business communities and academia to support such initiatives through regional, international and cross-sectoral collaborative networks.

ADDENDUM

Projects and Research Proposals submitted at Gaborone

This list of projects resulted from the work of the Commissions. The list is neither exhaustive nor prioritised, and is meant to be only indicative of relevant action. We envisage the development of a web based list of additional project proposals that fall within the scope of the objectives of WITFOR.

Using and promoting ICT as an instrument for environmental protection and the sustainable use of natural resources

Currently there is insufficient capacity world-wide to implement effective cross-boundary, interoperable environmental and risk management applications. For example, Europe is currently making a significant investment in building such capacity.

Therefore, we propose creating a project-based collaboration between developing and developed countries to be based on two major activities: a capacity-building activity and a research activity, focused on environmental information infrastructures.

The capacity-building activity will enable developing countries to use ICT better in environmental applications. It will be based on joint conferences, seminars and short courses.

The research activity will lead to implementation of a large-scale environmental information network, initially in southern Africa, based on existing and emerging standards. This activity is strongly related to regional and global initiatives and would be the seed for African participation in world-wide information infrastructures.

The outcome of the proposed activities will improve interoperability between countries' information systems and create a universal framework for environmental decision-making.

Promoting the use of e-business models to stimulate the investment of the private sector and support of governments for small and medium enterprises

We propose to create an electronic trading hub to enable rural communities to efficiently trade with larger consumers in the urban areas. The goods and commodities will be supplied to supermarkets and wholesalers and will range from poultry and dairy products to fruits and vegetables. The electronic trading hub (e-trading hub) will enable retailers in urban areas to place information regarding demand and the prices they are willing to pay for the day. The rural communities would access this information and know when, where and how much to supply. Suppliers could also place information on their products and how much they can supply so that consumers can know what is available. The rural communities would be able to access this information via mobile phones and via the Internet through their own Internet facilities at community access centres.

We further propose to create electronic market places (e-market places) for community based tourism projects in order to enable them to access new markets for their uniquely packaged products. The assumption is that such community based tourism projects already exist, albeit in their own unique forms that are mainly understood and accessible locally. Our aim is to create e-market places for the projects.

Linked to these projects will be a research process based on the premise that the nature of the projects must be multi-disciplinary where information, information technology and the integration thereof within the communities must be researched to benefit the communities in total. The following research questions will be addressed:

- *In what way and form will a rural-urban e-trading hub facilitate the generation and enhancement of economic opportunities in rural communities?*
- *In what way and form will e-market places generate and enhance economic opportunities in rural communities for community based tourism projects?*
 - Generation of income
 - Improvement of efficiency
 - Access to markets
 - Increase of competitiveness
 - Reduction of poverty
 - Improvement of standard of living.

Increasing awareness of the social, ethical and legal dimensions of ICT

We propose building a collaborative online community directed at bridging the digital divide in Africa. The aim of this project is to facilitate the creation of a collaborative online community to bring together all civil society stakeholders and initiatives directed at bridging the digital divide in Africa. This project will be in pursuit of the MDG to “develop a global partnership for development”. Thus, the purpose of the project is to first and foremost address the digital divide between those in Africa who are working on initiatives to bridge the digital divide.

We further propose the development and implementation of a Digital Online Network and Forum for Indigenous Knowledge. The aim of this project is to create an Internet based digital network for the conservation, development and dissemination of African indigenous knowledge (IK). The purpose of the digital network would be to bring together existing digital resources and to implement specific community based projects to record and promote indigenous knowledge (languages, narratives, rituals, artifacts, etc). The digital network will then provide the infrastructure to conserve, disseminate and protect this indigenous knowledge and to support indigenous knowledge processes. The project will be community driven and will initially focus on existing resources and on indigenous *cultural* knowledge that is easy to record and catalogue with minimal technology, such as aboriginal narratives. The project will collaborate with existing initiatives elsewhere such as the ‘FirstVoices’ project in Canada.

We further propose building a regional policy framework and capacity for controlling cyber crime. The aim of this project is to study the problem of cybercrime in developing countries (with specific focus on Africa) and produce resources to deal with it effectively. This will include the development of a policy framework, the harmonization of legal frameworks and the building of capacity in investigating and prosecuting cyber crime. The project will aim to build on existing international treaties and conventions such as the Council of Europe Convention on Cyber Crime.

Supporting an enabling and competitive environment for the necessary investment in ICT infrastructure

We propose the implementation of **GramPatra**, a product of Media Lab Asia for delivering value added digital services at places which do not have online Internet connectivity. Digital data, such as letters, audio, pictures, applications, E-Governance applications such as issue of birth and death certificates, land records, consultation with doctors/agricultural officers on health, crops diseases and other farming related information, astrology and complaint registration are some of the applications for which this can be used by rural people. An email interface has been developed which is the backbone of GramPatra for development of various applications appropriate for different rural areas.

GramPatra complements the present Internet technologies to further widen the reach of the digital revolution. Presently there is poor Internet coverage in many countries of the developing and under-developed world and hence there is poor availability of appropriate digital information access and exchange. GramPatra presents an intermediate solution for digital information access and exchange before online Internet becomes available in specific geographical locations. GramPatra can be deployed quickly as no tall towers and transmissions cables, etc., are required. GramPatra is a step towards meeting the Universal Service Obligation for digital information access.

This project will be complemented by a research project to raise interest in Digital Powerline technology with a view on initiating research into the use and applicability of powerline technology in developing countries to provide the last mile infrastructure. Digital PowerLine technology is an exciting alternative to connecting to the Internet via phone and modem. Though this technology is not commercially available yet, it should be available before other broadband technologies due to the relatively low cost of its local loop. Moreover, its high speeds will provide Internet access, video on demand, local phone, and long distance phone services to customers.

Developing ICT-enhanced education to achieve “Education for All” targets

We recognize the acute shortage in developing countries of qualified teachers, and **propose** to use ICT and innovative methods for accelerating and improving teacher education and competence of practicing teachers.

We propose to use innovative ways of ensuring provision of ICT facilities to students and educational institutions in developing countries, especially those in remote areas.

We recommend the sharing of best practices and experiences, as well as collaboration and partnerships, both north-south and south-south, in the use of ICT in promoting education.

We propose a professional development project to enhance the integration of ICT to teaching and learning in pedagogically meaningful ways. It aims at creating a model fostering sustainable development and collegial support to innovative learning and knowledge-creating communities of teachers. The project will be comprised of researchers and practitioners belonging to educational institutions and authorities from north and south, and is open to new partners. The objective is to create an organisational structure combining efficiently relevant educational authorities to flexible task forces. It allows researching integration of work, learning and institutional process.

We encourage the dissemination of the Stellenbosch Declaration “ICT in Education; What works?” based on 40 years of experience in IFIP’s Committee on Education.

We further recommend the use of existing initiatives in ICT certification in different areas and levels, e.g. teachers ICT licence, basic ICT user licence, ICT professional licence etc.

Using ICT to extend health care to remote and underserved areas

We propose the implementation of the BEANISH project (Building Europe Africa collaborative Network for applying ICT in the Health Care Sector). The overall goal of BEANISH is to build networks of research and development between and within countries in Africa and Europe on practical applications of ICT in the health sector. The concrete objectives are linked to:

- Strengthening Health Information Systems in Africa
- Collaborative development and application of Free and Open Source Software for Health
- Sharing “best practices” and capacity across countries.

Linked to this project as part of BEANISH is a research and capacity building project. This aims at creating a research network around globally distributed open source application software development.

The following actions are and will be undertaken to achieve the objectives:

- Organizing special sessions on open source software development at WITFOR 2005 and WITFOR 2007
- Creating an electronic forum to help develop a community of practice of health and research professionals interested in ICT applications
- Establishing a collaborative global network for the development of a demonstrator OSS application for health.
- Organizing workshops on OSS development in South Africa, Sweden and Norway.
- Exploring how African software development may be involved in the European outsourcing industry.

- Conducting Case Studies on local experiences of global open source application development, and synthesizing it into a generic research model for developing south-north collaborative networks.

Encouraging e-governance and e-democracy initiatives

We propose several projects focusing on empowerment and participation in line with the objective of utilising ICT for accelerated development and concentrating on the needs of developing countries. Empowering citizen enables them to participate in the information society as well as to improve their social and economic status. This objective becomes concrete in devising appropriate universal access policies and strategies as well as in developing cost-effective community user information systems. On the one hand government has to care for and promote the use of ICT, on the other hand e-Government is of top importance. e-Government programmes thus improve the quality and expand the reach and accessibility of the services offered to citizens. On closer inspection e-Government and e-Democracy are complementary processes in nature. For all such activities the criteria of sustainability and affordability of systems demand priority, and targeting the special requirements of marginalized groups is a main concern.

In the following, different projects are outlined, and the proposal is to seek the implementation of these successful projects in other countries.

In the first project, *The Cape Gateway Project*, the Centre for e-Innovation of the Western Cape Provincial Government in South Africa built a Portal which gives ICT services to the Provincial Government of the Western Cape. With 50 000 visits a month a substantial amount of information and advice is given to the public.

In the second project, the aim is to establish empowerment centres with the goal of enabling youth in adverse circumstances in Gaborone to be absorbed into the mainstream economy or tertiary education system as a way of getting them to rediscover opportunities or talents available to them to exploit. Hence the project can start in phases. What is important is to have a pilot site within the Gaborone peri-urban area where already large numbers of youths exist who are giving up in life and indulging in delinquent behaviour including alcohol and drug abuse. The pilot phase would be a year. During that phase motivational classes and computer appreciation classes would be outsourced. From the outset it will be necessary to have career and social guidance counselors on hand to advise specific individuals to be able to better target the materials to be presented. This would also be repeated after attendance of course materials.

Following the pilot phase the project would then be rolled out to other districts in a scaled up manner which would firstly result in one further centre up north and another in the south. During the pilot phase sites would need to be identified for the construction of such facilities. It is envisaged that for such a project to not only take off but yield perceived results it shall have to be operated by passionate people who would also need to be working within organizations which would enable them to operate.

Implementation of the project needs to be carried out by non-governmental organizations.

In the third project, experiences are drawn from twinning projects. They include a Migration Information System for Lithuania and twinning cooperation activities between Germany and Russia, in particular giving knowledge transfer to city administrations.

The projects would be supported by research activities aimed at establishing a framework of empowerment. Several aspects of such a framework would be addressed, *inter alia*:

- Government promoting the economy
- Government involving citizens in participation
- Government offering services to citizens
- Government providing Internet access
- Actors and Cooperation
- Structures and Resources
- Funding
- User needs
- Usability
- Technology
- Trust, Security and Privacy
- Strategies
- Managing change.

Using ICT in the dissemination of knowledge and information, particularly to rural communities, to improve agricultural production

We propose a project to enhance the managerial and financial skills of traditional livestock farmers and others – the Cattle Farming Management System (CFMS).

The CFMS is a sophisticated planning system for practical on-farm use to assist cattle farmers by calculating an optimal herd composition and a marketing strategy under different climatic and economical circumstances, resulting in maximum profit, preventing soil erosion by overgrazing and maintaining a healthy herd. This is done by an optimising system, based on a mathematical model of a cattle farm and a database with all farming factors of interest: rainfall, available grazing, animal growth curves, feed and (forecast) meat prices.

The CFMS uses innovative computer game features (animation, graphics and icons, with a minimum of text) to make it understandable for those farmers who have never had the opportunity of professional education. The CFMS will be developed by a multi-disciplinary team of specialists from the fields of agriculture, information technology, mathematics, education and graphic arts.

It is estimated that in total 54 manmonths are required by some 16 to 20 specialists from the above disciplines. The estimated budget is €75,000, including equipment.

We propose a supporting research project to develop a model that could accurately predict the performance of grazing animals and pasture production under variable rainfall and temperature conditions. Such a model could assist governments with rangeland management, strategies for research and development, and livestock marketing, and would link strongly with the proposed Cattle Farm Management System for Traditional Livestock Farmers.

WITFOR 2005 Draft Programme:

(edited 21 May 2005)

| | 31 Aug 2005 | 1 Sept 2005 | 2 Sept 2005 |
|-------------|---|---|--|
| 0830h-1030h | <p>Opening Ceremony Chair Hon. P. Venson Welcome Speech HE The President of Botswana</p> <p><u>Guest Speakers</u> HE The President of Lithuania (TBC)</p> <p>HE Prime Minister, Egypt/ Namibia (TBC)</p> <p>EU Commissioner (TBC)</p> <p>President of IFIP Prof. Klaus Brunnstein</p> | <p>Second Plenary Chair: (TBC) Speakers from UN Organisations (UNDP, WHO, ITU, UNESCO) & COL</p> <p>Platform of Cooperation: Session on Potential projects and proposals</p> <p>Invited keynote speaker from the UN, evaluation of project and proposals</p> | <p>Fourth Plenary Chaired by Hon Dr Ivy Casaburri, Minister of Telecommunications, South Africa</p> <p>Discussion on potential cooperation <u>Panel Discussion</u> involving Ministers, representatives of International Organisations, NGOs and the Private Sector</p> |
| 1030h-1100h | Networking break | Networking break | Networking break |
| 1100h-1230h | <p>First Plenary cont Chair: (TBC) Invited keynote speaker Prof. Chrisanthi Avgerou, LSE, UK, Chairperson IFIP TC9</p> <p><u>Best Practice Country Experiences</u> Presentations by selected Ministers (Egypt, India, Canada - at most two countries) (TBC)</p> | <p>Industry Session (parallel?) Chair: (TBC) Microsoft - Mr Emre Berkin, Chairman, Africa and the Middle East Ericsson.... TCI...</p> <p>Ministers' Round Tables (parallel sessions) chaired by Chief Emeka Anyaoku (TBC) & ... Themes to be finalised around cross-cutting issues, policy, capacity building, resources,..</p> | <p>Chair: (TBC) Presentation of Gaborone Declaration Adoption of Declaration</p> <hr/> <p>Chair: (TBC) Input to WSIS 2005 and achieving UN MDGs</p> |

| | | | |
|-------------|--|--|---|
| 1230h-1400h | Lunch (Special lunch for VVIPs hosted by VP/ Gaborone Sun) | Lunch (Special lunch for Ministers & other VIPs hosted by Minister MCST/ Grand Palm/ boma) | Lunch (Special lunch for Resource Persons hosted by Permanent Secretary MCST/ Grand Palm/ boma) |
| 1400h-1530h | Commissions Thematic Meetings I Best Practice Case Studies (8 parallel sessions) | Education Competition Award Third Plenary Chair: (TBC) Open discussions on the Declaration of Gaborone | Chair: (TBC) Input to WSIS 2005 and achieving UN MDGs (cont.) & Arrangements for WITFOR 2007 1600-1630h Chair: (TBC) Official Closing |
| 1530h-1600h | Networking break | Networking break | Networking break |
| 1600h-1730h | Commissions Thematic Meetings II Commission Group Discussions (8 parallel sessions) | Commissions Thematic Meetings III Commission Group Discussions (8 parallel sessions) | |
| 1900h-2030h | Govn of Botswana Dinner VIPs, sponsors, resource persons (Phakalane/ by invitation only) Get together/ Cultural Evening (Grand Palm garden/ open event) | Sponsor's Dinner (Ericsson/Arivia) (GICC/ Marquee/ by invitation) | |

WITFOR Education Commission Report

Enhancing ICT competence of teachers in the SADC region through innovative learning & knowledge communities

Alain Senteni, Paul Nleya, Matti Sinko, education commission co-chairs, with contributions of Mike Aston, Ritva Engeström, Daniel Schneider & Alain Taurisson

This WITFOR Education Commission Report includes :

- the case study to be presented by the Education Commission gives an overview of training initiatives for the integration of ICTs in Mauritius. The report focus essentially on the Computer Proficiency Programme (CPP) and the Virtual Centre for Innovative Learning Technologies (VCILT).
- The Education Commission project itself, focusing on the emergence of innovative learning and knowledge communities of teachers
- The research dimension of the Education Commission project, embodied in a Distributed Change Laboratory (DCL)

A more comprehensive analysis of the case study, the project and its research dimension is available in two separate documents, available in pdf format on the WITFOR Education Commission portal [<http://vcampus.uom.ac.mu/witfor/>]

Education Commission Case Study: a comprehensive analysis of training initiatives for the integration of ICTs in education in Mauritius

Some three years ago, the government of Mauritius decided of a national policy to convert the mauritian economy, mainly based on textile and tourism, into an economy of IT-enabled services (ITES) and business process outsourcing (BPO). The promotion of information and communication technologies (ICT), embodied in the creation of a cybercity, lies within the framework of an economic and social re-engineering at the scale of the whole country, *to make Mauritius a cyber-island and a knowledge hub in the indian ocean*. At the light of some major pragmatic projects undertaken in this context, one can witness the emergence of generic implementation mechanisms and methodologies grounding the relationship between society and technology to allow for action.

The case study presents the interacting actors and components of the Computer Proficiency Programme (CPP) resulting in the initial training at computer proficiency level of 36 000 persons, including some 6000 teachers, in a period of two and a half years. The project is presented from a systemic perspective, emphasising the emergence of a composite network organisation, whose sound working principles insure its efficiency and survival.

The Virtual Centre for Innovative Learning Technologies (VCILT) of the University of Mauritius took care of the development of CPP contents & pedagogy as well as of the training of trainers. An overview of VCILT platforms, tools and resources is provided through a community portal [<http://vcampus.uom.ac.mu/witfor>], to be used as a resource centre in the Education Commission project.

- The Computer Proficiency Programme (CPP), a network organisation

In October 2002, the Computer Proficiency Programme (CPP) was launched by the Implementation Working Group (IWG) of the e-Education & e-Training Task Force, chaired by the Minister of Education & Scientific Research (MOESR).

The CPP is a nationwide basic ICT training programme which fits into the government's vision of transforming Mauritius into a cyberisland. The CPP caters for ICT skills at level 3 within the 7 levels of the ICT national strategy for the development of a Human Resource base:

Level 01: ICT Awareness Level 04: ICT Studies

Level 02: ICT Literacy Level 05: Associate ICT Professionals

Level 03: ICT Proficiency Level 06: ICT Professionals Level 07: ICT Specialists

The CPP offers a 48 hours hands-on training on PCs at a very affordable price of Rs 700 (USD 20), thus attracting a lot of people who otherwise, would never enroll for an ICT training course. The programme targets all teachers, secondary school students, the unemployed the working population (factory workers, hotel and service industry, civil servants, housewives and the retired people).

After 30 months of operation, the CPP has reached 36 000 persons, including some 6000 primary and secondary school teachers.

The CPP is a composite network organisation, federating technical and human resources and skills, distributed in various institutions or individuals, under a unique strategic business goal. Each component of the network is selected for one specific strength, so that the programme benefits from an ideal blend of strengths in different domains of activity. Meanwhile, in a spirit close to "Creative Commons", the CPP branding is used by all of its components, with no exclusivity, in a kind of protean organisation insuring that the project remains able to go ahead, even when one component fails.

From an *a posteriori* theoretical perspective, the success of the CPP is based on the respect of a minimal set of rules, deriving from research work on Open Information Systems Semantics (OISS)¹. Self-reliance, empowerment, interdependence, asynchrony, reflexivity and commitment constitute this set of rules, considered as a major reference for the setting up of communities of practice².

¹ Hewitt, C. (1991) "OISS Open Information Systems Semantics for Distributed Artificial Intelligence", Artificial Intelligence, 47, p. 79-106.

² Scardamalia, M., Bereiter, C. (1996) "Student Communities for the Advancement of Knowledge" Communications of the ACM, Volume 39, Number 1, January 1996, pp. 36-37

The CPP is a good example of how innovative solutions can be found for training, without any major investment and a heavy organisation structure. One innovative dimension of the programme, at the root of its quick start and achievement, is an MoU with the Ministry of Education for the utilisation of the State School infrastructure, free of charge, after school hours. The MoU insures free access to the computer labs of 30 State Schools (around 600 computers).

According to a recent report of the World Economic Forum, bureaucracy comes at the first rank of the brakes of development in Mauritius and many other developing countries. Bureaucracy remains an inheritance of colonial time, initially set up for its accountability to foreign control than for its clear contribution to the sustainable development of the country, attentive to the evolution of individual/collective, local/regional dynamics. Network organisations emerge as one of the most credible alternative to bureaucracy.

A network organisation functions as activity systems in which working, learning and innovation are not considered conflicting forces, but rather interrelated, compatible and potentially complementary. To reach its goal, the CPP follows a pragmatic blend of non bureaucratic formal/non formal approaches based on a network of actors from public and private sector, that ensured the success of the programme. CPP can be taken as an example of innovative learning and knowledge community whose network organisation overcomes the barriers often encountered in more hierarchical and bureaucratic organisations.

• The Virtual Centre for Innovative Learning Technologies (VCILT)

The Virtual Centre for Innovative Learning Technologies (VCILT) has been acting as the back office of the CPP project from the beginning, providing evolutive resources and training in a demand-pull fashion, inline with emerging needs.

The VCILT was created in April 2001 by the University of Mauritius, to face the increasing number of students. The VCILT implements new technological tools and new methods closely related with these tools. In March 2005, the centre counts about twenty permanent staff, blend of instructional designers, multimedia, web and infrastructure developers.

Among VCILT's achievements deserving to be mentioned :

- about fifty online/web-enhanced courses at the university;
- major technological developments, including a Learning Object Repository (UoM-LOR) and a virtual campus platform (UoM -iLearn);
- the VCILT participated in 2003 in the creation of the University of Mauritius " Lifelong Learning Cluster " (UoM-LLC) to answer some immediate or emerging needs of the ITES and BPO sectors. In this respect, the LLC proposes training programmes in professional development, such as a fully online Master's Degree on Computer-Mediated Communication & Pedagogies (MSc CMCP).

- Since its creation, the VCILT has been organising or participating in the organisation of several international events in the domains of Technology-Enhanced Education, and Knowledge Creation. Among these events, the ICOOL conference that attracted in Mauritius in 2003 more than 150 researchers from 19 countries. In July this year, ICOOL 2005 takes place in Stellenbosch (ZA), in the context of the 8th IFIP World Conference on Computers in Education (WCCE 2005).

Education Commission Project: enhancing ICT competence of teachers in the SADC region through innovative learning & knowledge communities of teachers

• Partners

The Education Commission project will be led by a consortium whose founding members are as follows:

1. Helsinki University of Technology, through its Lifelong learning Institute Dipoli
2. University of Helsinki, through its Centre for Activity Theory and Developmental Work Research (CHAT & DWR)
3. University of Mauritius, through its Virtual Centre for Innovative Learning Technologies (VCILT)
4. University of Botswana, through its Department of Educational Technology
5. Ministry of Education in Botswana
6. Ministry of Science, Technology and Communication in Botswana
7. University of Geneva, through its TECFA laboratory.

Additional members will be solicited from South Africa, Namibia and other SADC countries. For the time being Helsinki University of Technology Dipoli serves as the technical coordinator until the letters of intent and the contract between the members of the consortium will be signed.

• Innovative learning & knowledge communities of teachers

Based on the principle of coevolution of social, material and technical factors, innovative learning and knowledge communities consider social and technical processes from a systemic viewpoint, in an evolutionary perspective of education and culture, allowing to build meaning and capacity through community development and networking. The WITFOR Education commission's project objective is to mobilise pioneering SADC region teachers and teacher educators to become change agents in improving the professional competence of teachers in using ICT.

Through the setting up of a SADC-wide professional development project and support network, the project aims at :

- creating the conditions for the emergence of innovative learning and knowledge communities of teachers, participating in "the simultaneous reconstruction of educational contexts of which they form a part"

- training a network of Change agents to provide collegial support to these communities, through the setting up of local and distributed (so-called) Change Laboratories (CL).

The CL methodology, based on the Activity Theory of work, helps its actors in contextualising the development of their own work and optimising the use of resources and outcomes, thus strengthening the positive impacts of training by organising teachers to set up local/virtual communities.

In addition to the professional development project of teachers proposed, in the education commission sessions will be discussed the theoretical background for the initiative, earlier experiences, experiments and challenges.

- The professional development model

The objective of this project is to enhance ICT competence of teachers in the SADC region in order for them to utilise ICT in pedagogically meaningful ways in schools and education institutions by :

- 1) setting up a gradually growing number of school-based ICT development groups, starting with Botswana and Mauritius;
- 2) anchoring the work of these school-based innovative teachers groups in the activity theory of work and in particular in the development method called change laboratories (University of Helsinki being the leading research centre in this field);
- 3) supporting these school-based groups from outside by:
 - a. ensuring that the pedagogical leadership in schools supports the work of the change laboratories through supporting the head teachers; and
 - b. supporting participating teachers in the change laboratory activities by a resource centre and network based in and maintained by the Virtual Centre for Innovative Learning Technologies (VCILT) at the University of Mauritius
- 4) linking this emerging network of school-based change laboratories with other networks of teachers and schools in Africa, e.g. SchoolNet Africa; and
- 5) seeking possibilities for setting up for the teachers and head teachers participating in this activity an institutional framework in the blended HE form a professional development or masters programme in ICT enhanced pedagogy through one or several member universities of the consortium.

The professional development model of the project is based on the collaborative development of local and virtual knowledge and innovation communities of teachers by blending work of teachers, learning of students and teachers with innovations (called change or competence laboratories of change agents, comprising of ca 15 members in each). These communities will then be networked with other similar teacher communities supported by mentors from national teacher education institutions networked also with a virtual resource support centre and a diaspora of experts, involved from the beginning as partners of the project.

Education Commission Research : A Distributed Change Laboratory (DCL)

The Distributed Change Laboratory (DCL) is the WITFOR Education Commission research project. The DCL is a research-action project whose first objective is to assess the relevance of the Change Laboratory (CL) methodology in the regional context. The second and main objective is to adapt the CL methodology to this context and apply it over the network of communities of the WITFOR Education Commission project, as a collegial support framework, supported through an internet community portal.

The CL methodology was developed by a group of Finnish researchers led by Yrjö Engeström since the mid 1980s. Based on Engeström's theory of expansive learning, the Generic Change Laboratory method was developed in 1997, as a condensed way to carry out Developmental Work Research, an activity theory based methodology for studying and developing work practices in collaboration between the researcher and the practitioner. Used in Finland in tens of public and private organizations representing many branches of industry, the CL has been applied successfully in health care services in Finland (Engeström, Virkkunen et al., 1996) and in the USA (Hall & Hord, 1987 & 2001) (NTTAC, 2005), as well as other innovation schemes, e.g. for the integration of ICT in schools (Engeström, Engeström & Suntio, 2002). The purpose of the method is to help a work team or the members of an organizational unit to encounter the problems they face in their daily work and systematically analyze the systemic causes of these problems and design and implement a new form for the activity to overcome the root cause of daily problems (Virkkunen, 2003).

The DCL research project brings about a systematic and methodological reflexive dimension to the professional development proposal of the WITFOR Education Commission. It thus appears as a coping strategy, as defined by the UNESCO MOST project for the management of social transformations.

- Coping strategies

Coping strategies capture local strategies that result from the process of reflexivity. They include three dimensions; innovation, networking and formation of identity. The first dimension - innovation - stresses the ability to find new solutions to socio-economic problems within a global and increasingly knowledge based context. The second dimension - networking - stresses one important mechanism in creating new social relations; the development of interpersonal relations that are transcending the limits of institutionalised social fields. The third dimension - formation of identity - is the active formation of identities that can reflect on educational discourses from the local to the global (Aarseth, et.al. 2001): the "global top" and the "local bottom" act collaboratively to reform what is in between (Baerenholdt, 2000) (Beland Lindahl, 2001).

A prerequisite for the establishment of local coping strategies is the perceived "opening" of the existing systems. In our case, WITFOR can be considered as a triggering event for this opening, in relation with the massive introduction of ICTs in the development process, and with the emergence of the Knowledge Society paradigm at the international level (e.g. WITFOR theme : ICT for accelerated development)

- The concept of change

The concept of change is usually reserved to structural long-lasting transformations of an activity system, whether in a complex organisation, in a group or an individual. One of the goals of WITFOR in general, and of the WITFOR Education Commission project in particular is to open a space for (re-) negotiation and change of obsolete unefficient process, without necessarily threatening existing structures. Obviously, the work undertaken cannot become sustainable without, in parallel with individual change of mindsets, a gradual change occurring inside traditional institutions and structures (schools, TELs, etc). This gradual change will not happen just by the magics of wishful thinking.

- A task force of change agents

The rationale for the WITFOR Education commission's project is to mobilise pioneering SADC region teachers and teacher educators to become change agents in improving the professional competence of teachers in using ICT through a SADC-wide professional development project and network. The project aims at establishing a SADC-wide teacher support network and enhancing professional development of teachers and teacher educators through a network of so-called change laboratories.

The role of the change labs (CL) is to train a task force of "change agents", acting in their own school/college/training institution as a collegial support informal mechanism to plan and monitor the implementation of activities as per schedule. Change agents will act both locally to foster empowerment, progress and quality, and also through a distributed change laboratory, embodied in the community portal.

This type of framework, currently under development at the VCILT is inspired from a similar network implemented by the NTAC³, in the USA.

The change agent using the CL method:

- negotiates the project with the management and the intended work team/unit
- collects mirror material (videos or others) about the work to be used in the sessions
- selects and edits the mirror material for the sessions
- plans the agenda for the sessions and the learning actions the practitioners are supposed to take: task, material, analytic tools
- facilitates the discussion, acting as a radical outsider prompting discussion
- secures the multivoicedness of the discussion and a balance in the participation
- helps the group to report the process

The VCILT is currently busy working on the specifications of a portal for change agents, to be added to the seed resource centre already provided. The objective is to propose a

³ NTAC operates under a Cooperative Agreement between the National Association of State Mental Health Program Director (NASMHPD) and the Center for Mental Health Services (CMHS), Substance Abuse and Mental Health Services Administration (SAMHSA) in the US.

documented design and contents proposal for the portal, to be discussed during ICOOL in July in Stellenbosch with most of the project partners, in view of eventually implementing by the end of August, and present it at the workshop following WITFOR.

The objectives of this community portal are:

1 - to present state-of-art resources and documentation on developmental interventions in organisations, process of collective learning and change labs.

2 - to conceptualise, define and structure a virtual space to be used as a distributed change lab anchor.

3- to conceptualise, define and structure online templates and instruments for the reflection of :

- model, vision
- ideas, tools
- mirror and data collection tools

as per the change lab methodology.

This portal will be used both as a methodological support for future change agents, and as an instrument to help them with :

- the followup of ongoing projects in schools or training centres,
- the mirroring of these projects
- the close support of the collective concept formation, and successive cycles of planning & implementation.



Ritva Engeström

**Center for Activity Theory and Developmental
Work Research / University of Helsinki**

**Change lab – a new perspective to
teachers' professional development**



1. Theoretical framework is *cultural-historical activity theory*
2. *Change laboratory* method focuses on historically emerging tensions and *contradictions* in the *activity system*
3. The goal is to **expand** the understanding of practitioners' activity through experimenting and reflecting
4. Change laboratory is composed of *polyphony* and promotes people's possibilities to utilize their multiple understandings and identities



Zone of Proximal Development (ZOPED)
The method of Double Stimulation (Reflexivity)
Intervention method (Change Laboratory)

❑ HOW TO STUDY THE DIRECTION OF CHANGE AS
"NOT YET EXISTING"?

❑ HOW TO INTERCONNECT THE ORIENTATION TO
THE "NEW" WITH THE OPEN APPROACH TO THE
FUTURE?

❑ WHAT ARE THE FUTURE-ORIENTED ACTIONS?



EXPANSIVE LEARNING

ZOPED **FROM** INDIVIDUAL **TO**
COLLECTIVE CONTEXT

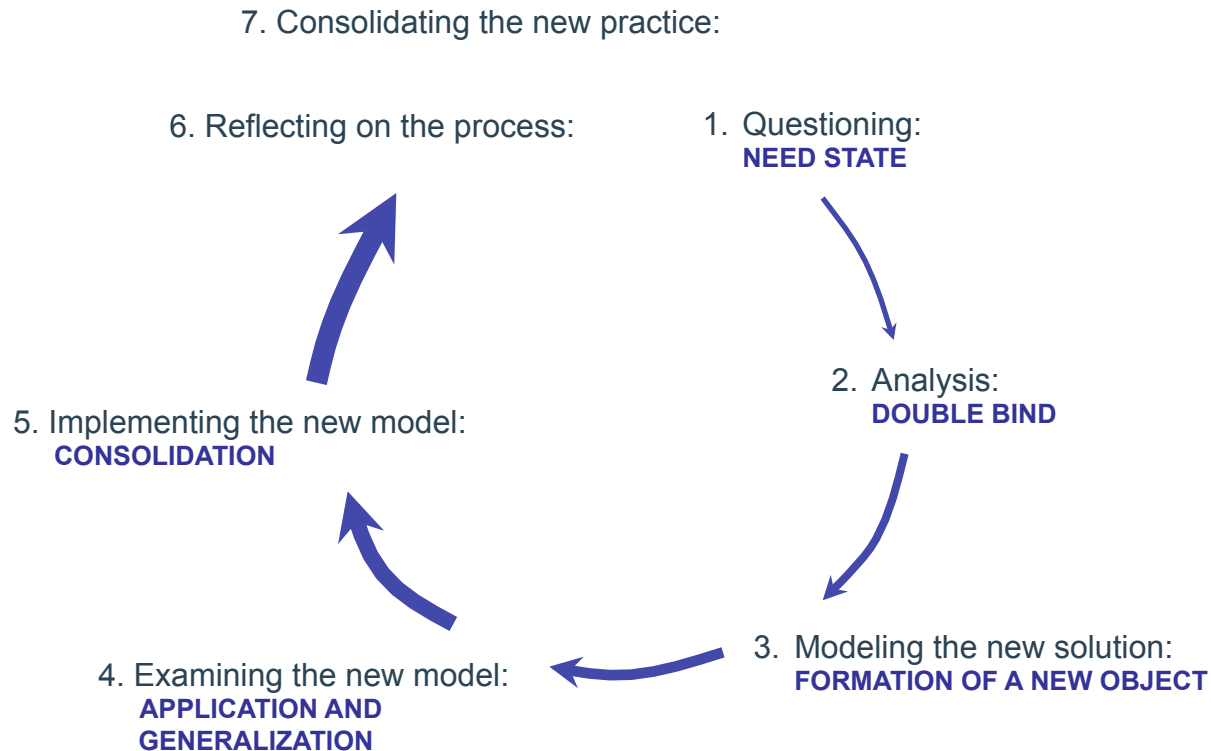


Zone of Proximal Development:

distance between present actions of the individuals and the historically new form of the societal activity that can be collectively generated as a solution to the double bind potentially embedded in everyday actions (Engeström , y. 1987, p. 174)

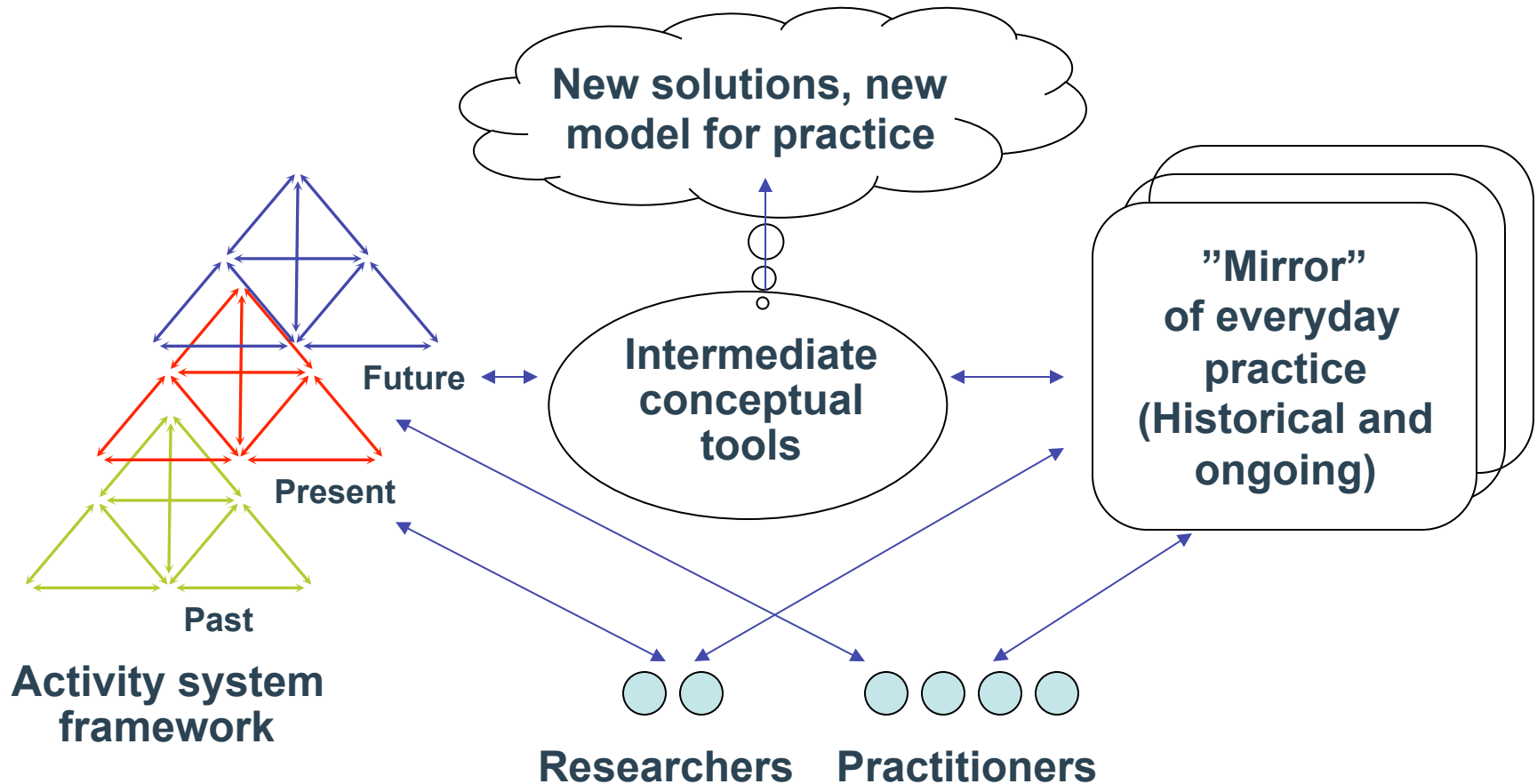


The Cycle of expansive learning





The Change Laboratory setting





The change laboratory method in practice

- **Practitioners participate to the joint sessions with researchers**
- **Participants gather data by videotyping and excerpts are shown in sessions (mirror data)**
- **Participants work for change experiments**
- **Sessions are videotaped for getting excerpts for reflection**



THE SCHOOL

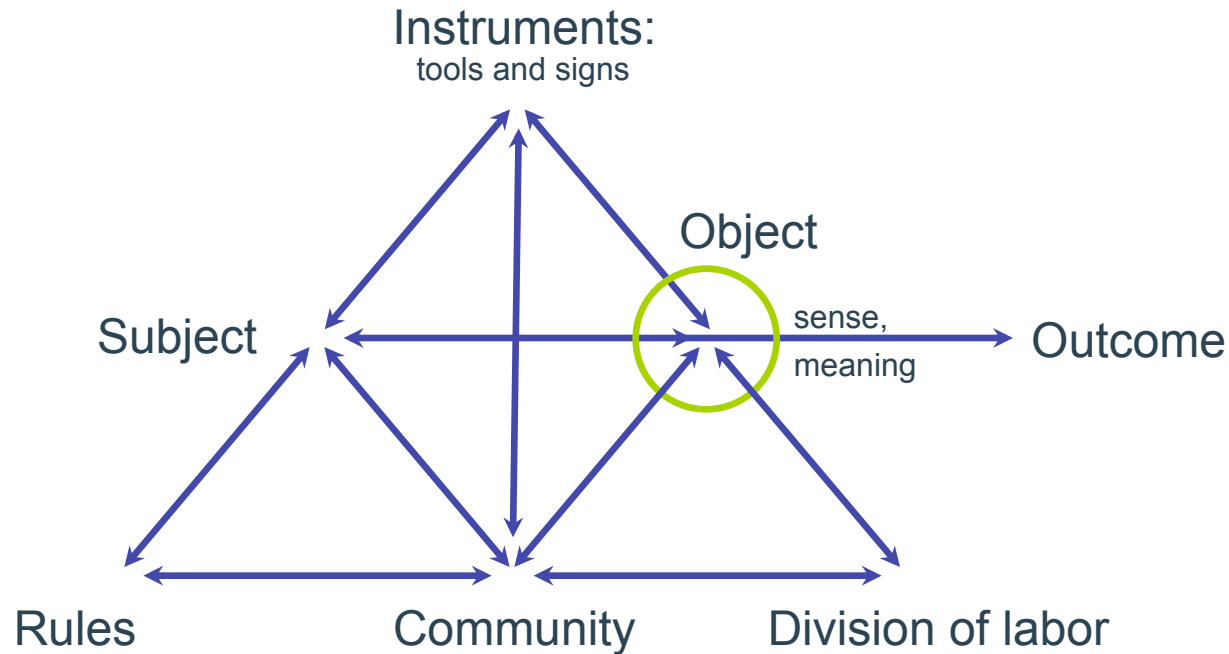
- **Secondary school (7, 8, 9, + 10 grades)**
- **280 students**
- **30 full-time teachers**
- **30% of the students coming from immigrant families**

- **Change Laboratory school year 1998/99**
- **Knowledge Laboratory 2000/01**
- **Knowledge Laboratory 2001/02**





The activity system



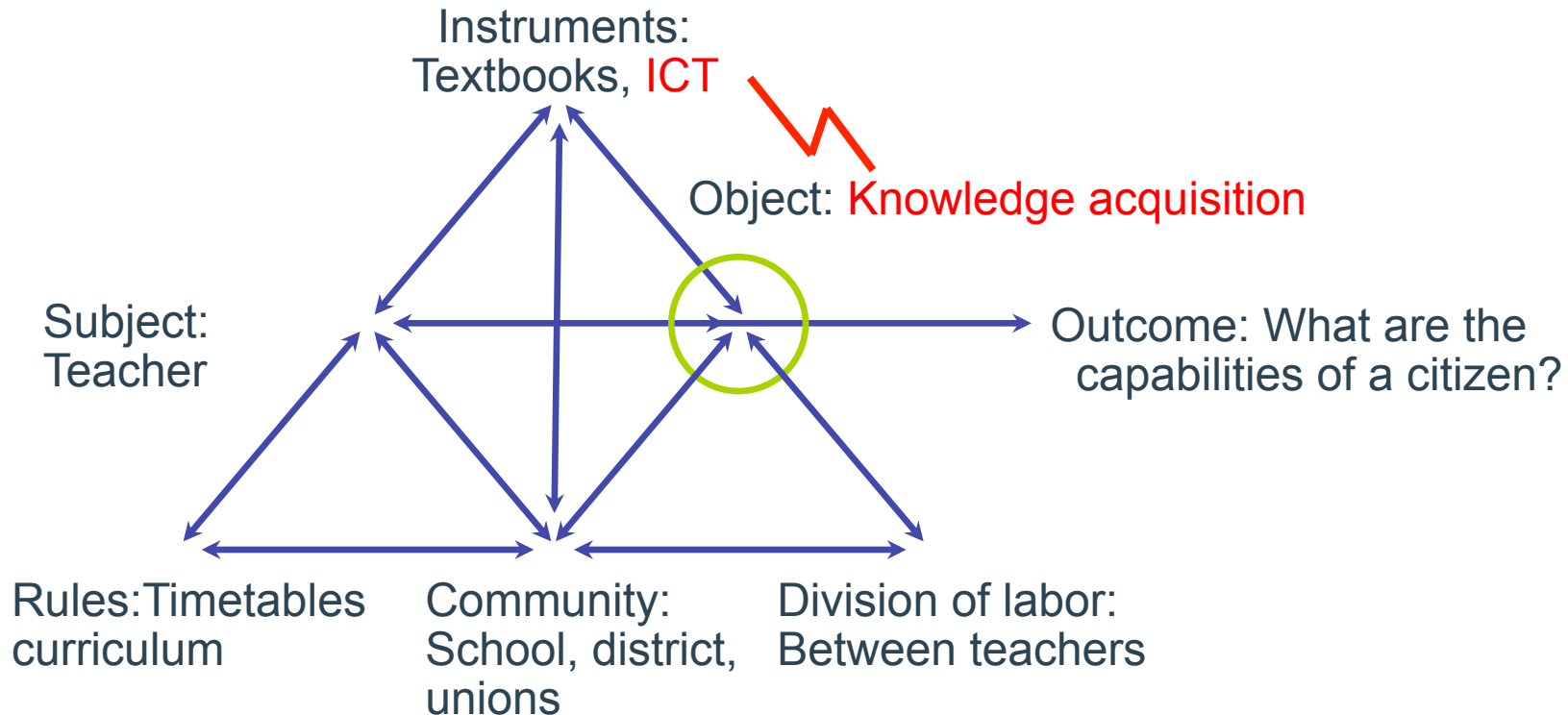
Source: Engeström, Y. (1987). Learning by expanding: An activity-theoretical approach to developmental research. Helsinki: Orienta-Konsultit.
(available online at: <http://lchc.ucsd.edu/MCA/Paper/Engestrom/expanding/toc.htm>)



7 10 1998
Would it be there in the hall, or?



Activity System of teacher's work





Developmental Tansfer

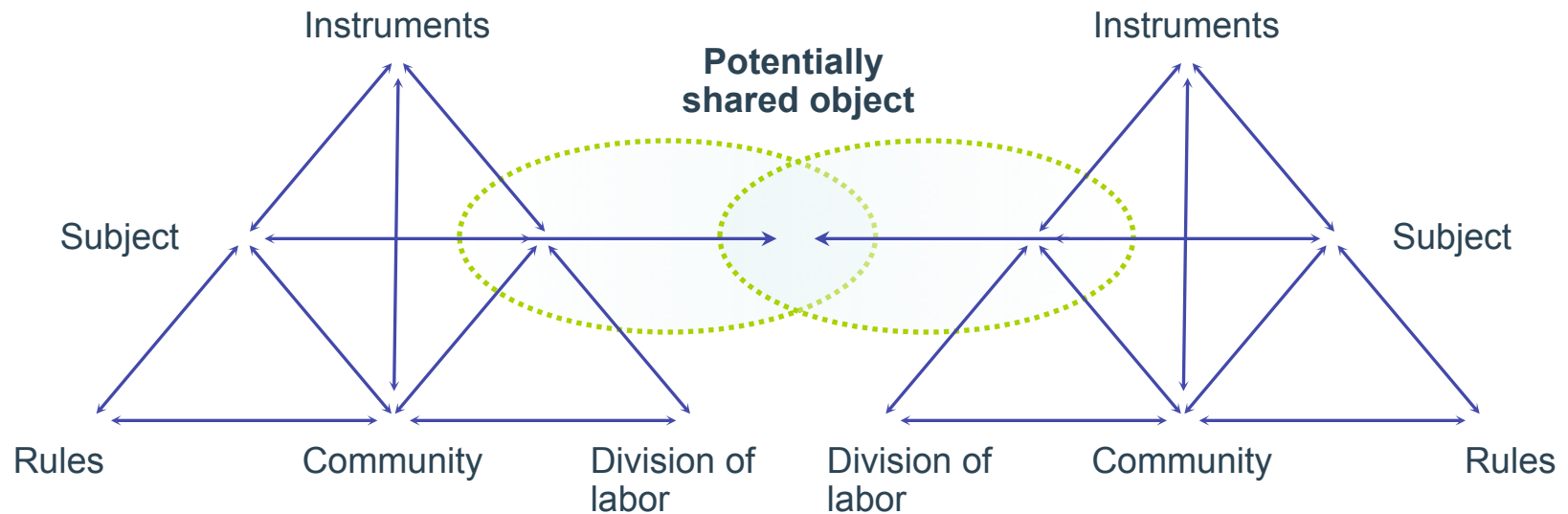
- **Boundary Zone**
- **Negotiations on a developmental project**
- **The student's role**

INTEGRATING

- **Schooling of teachers**
- **Organizational development**
- **Academic research**
- **Professional development of teachers**



Two interacting activity systems



Source: Engeström, Y. (2001). Expansive learning at work: Toward an activity-theoretical reconceptualization. *Journal of Education and Work*, 14, p. 136.



WSIS - and a Step Forward

by Marianne Nganunu, Permanent Secretary, Ministry of Communications, Science and Technology



A concern to people all over the world and, not least, in developing countries is the lack of implementation of policies and strategies. In developing countries ICT related projects, which tend to be technology intensive, are likely to suffer from both lack of financial resources and local skills. At the

same time, Heads of State and policy makers are aware of the power of ICT as a tool to address development issues related to poverty, health, education and unemployment. This was discussed at WSIS I in Geneva in 2003. The WSIS Declaration of Principles and Plan of Action chart the way forward how ICT can help address the UN Millennium Development Goals.

The World Information Technology Forum (WITFOR), which is an initiative of the International Federation of Information Processing and which was launched in Lithuania in 2003, is developing into an instrument to take WSIS one step forward, i.e. from policy to action. Thus, WITFOR 2005, which was held in Gaborone Botswana, was designed to help developing countries overcome financial obstacles through the use of innovative practices, partnerships and shared resources.

The outcome of WITFOR 2005 is the “**Gaborone Declaration**” and, attached to it, “**Proposed Projects and Actions**”. Refer to the WITFOR 2005 website,

www.witfor.org.bw. The projects listed are best practice case studies from around the world, as well as new ones, which countries can copy and adapt to their needs.

The theme for WITFOR 2005 was “ICT for Accelerated Development”, and the specific objectives were:

- to find ways of utilising ICT for accelerated development in line with the UN Millennium Development Goals and the WSIS Plan of Action;
- to pay special attention to the needs of developing countries and to assist them in accelerating development through the applications of ICT;

Some 800 delegates, representing 66 countries and all continents of the world met in Gaborone Botswana from August 31st to September 2nd 2005 to address the above theme and objectives under eight separate sub-themes or Commissions. These were:

- Building the Infrastructure
- Economic Opportunity
- Empowerment and Participation
- Health
- Education
- Environment
- Agriculture
- Social, Ethical and Legal Aspects



(Continued on page 2)

| | | |
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Each Commission, which was chaired by a team of international experts, was tasked to present a best practice case study from anywhere in the world, proposing a project that can be implemented as a partnership project between countries (N-S or S-S), ideally with a research component, and with the potential to bridge the digital divide.

The Forum was opened by His Excellency the President of Botswana and the participants included the Prime Minister of Namibia, about 20 Ministers and another 10 VIPs. Other delegates were senior government officials, CEOs from the Private Sector, academics and some NGOs. The participation was greatly enhanced through the financial support from the ACP Group, which offered support for one delegate from each ACP country. Presentations were of high professional quality, the case-studies attracted much interest, and the Gaborone Declaration was adopted. The Commission co-chairs all delivered their assignments as expected and all to a very high professional standard. Although there was no formal evaluation of the Forum, all verbal reports indicate that the delegates were very happy with the delivery of the sessions and the outcome.

The project proposals emanating from WITFOR are presented as an annex to the Gaborone Declaration as Proposed Projects and Actions. Some projects were already launched at WITFOR. For example, a SADC Education project that will provide a virtual resource centre for teachers, and a Europe-SADC Health project that aims to develop a health information system using open-source software. The European Commission's 6th Framework Programme's Information Society Technologies (IST) program has already provided seed funding for the health project, referred to as the BEANISH project (Building Europe Africa collaborative Network for applying IST in the Health Care Sector), to be implemented as a partnership project between two European countries and six African countries.

The Forum's success included adequate funding, wide range and level of participants, the involvement of the private sector and NGOs, the private-public sector part-

nership, the sharing of best-practice socio-economic ICT projects from around the world, the initiation of new projects, and the adoption of the Gaborone Declaration. The Forum was also well publicised and many could watch the proceedings from their homes. The Forum was broadcasted throughout Sub-Saharan Africa by satellite television and throughout the world through web casting. High-profile sponsors were able to exhibit and showcase state-of-the-art technology. These included large ICT multinationals as well as the European Commission, UNESCO and many others. The local community, in particular the local telecommunications regulator and telecommunications providers, including many other local ICT private sector companies, also took a very active part in WITFOR, both as organisers or sponsors.

The limited exhibition space may be seen as a constraint. The Forum was not able to provide exhibition space to all sponsors (about 40) due to the space available in the conference foyer. Therefore a decision had to be made to limit the exhibitors to the high-profile sponsors, i.e. those who contributed Euro 50 000 or more. The issuing of visas initially appeared as a big problem, as there are not many Botswana Embassies around the world, but was resolved by the Immigration Department in Botswana who agreed to issue visas on arrival. Thus, letters were faxed to registered participants to confirm the above and to facilitate their travel.

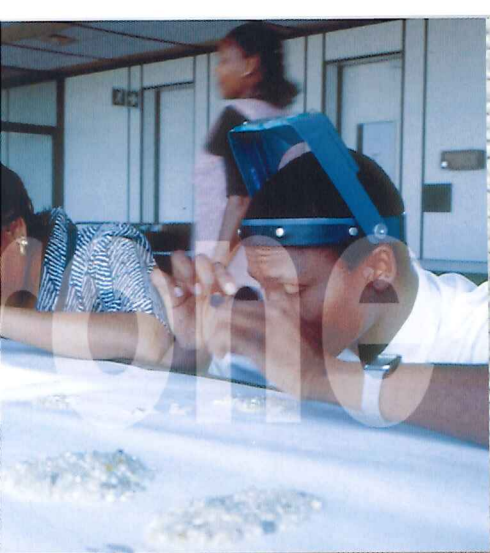
The registration of such a large number of participants posed a potential risk. With press, exhibitors, technical and other support staff we had about 1250 registrations. This potential problem was resolved as one of the resourceful sponsors agreed to use their resources and experts to handle the registration. Thus, the registration process ended up being smooth and efficient.

The WITFOR event and all documentation can be found on the website, www.witfor.org.bw. In particular, readers are advised to check the website for the Gaborone Declaration and project ideas. The plan is that the ideas for projects should grow and that the website develops into a valuable resource for developing countries around the world. WITFOR 2007, which will be held in Ethiopia, will be an opportunity to take stock of the success.



WITFOR 2007

Immediately after IFIP WITFOR 2005 already the first informal meeting for WITFOR 2007 took place during breakfast (Saturday morning, 07.00 a.m.) between Dipak Khakhar (Chair of the WITFOR 2007 Steering Committee), Leon Strous (program chair) and his Excellency Getachew Belay, Minister of Revenue, Chairperson Ethiopian Telecom, Member of the National ICT Coordinating Committee for Development, Ethiopia.



The country and the people

Botswana lies in the Southern African region. It is a land locked country, and shares borders with the Republic of South Africa in the east and south, Namibia in the west and both Zambia and Zimbabwe on the northeast. The size is 581 730 km Square (approximately the size of Kenya or France) nearly 17% of which is protected wildlife area. The country is sunny and dry and to a large part covered by the Kalahari Desert. The population currently stands at about 1,7 million. The official language is English and the national language is Setswana. Botswana is a multi party democracy.



World Information Technology Forum 2005

Under the Auspices of



Organised by



Hosted by



Republic of Botswana

In Collaboration with



29th August to 2nd September 2005



The Government of the Republic of Botswana, in collaboration with the International Federation for Information Processing (IFIP) and UNESCO, is proud to host the second World Information Technology Forum (WITFOR) from the 29th August to 2nd September 2005 in Gaborone.

The purpose of the WITFOR Conference is to help implement information development strategies and projects in developing countries. The conference will also address issues critical to developing countries such as the role of ICT in fighting HIV/AIDS, poverty and bridging the 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 will be submitted to the UNESCO General Conference in 2005 for adoption as the 'Gaborone Protocol'.

WITFOR 2005 will be an opportunity for Botswana to demonstrate its efforts in representing the developing countries' ambitions to keep pace with on-going technological transformations and enhance their presence within the globalised communication fora.

I wish to assure you that this will be a unique event as we in Botswana arrive at consensus on the most divergent interests and issues in a very friendly and cordial manner. In Botswana we have our traditional democratic consultative fora or "Kgotla" enriched with the concept of "Botho" which symbolises recognition and respect for others opinions.

You are invited to WITFOR 2005 and to participate in the development of the Gaborone Protocol. You are also invited to the discussion forums on the web site www.witfor.bw

While here, we hope that you will get a chance to take time off and to visit the Okavango Delta in order to see the natural beauty of our country.

Festus Mogae
 Festus Gontebanye Mogae
 President of the Republic of Botswana
 Honorary Chairperson of WITFOR 2005

WITFOR aims to:

- Help put equity on the agenda of different organisations, government and groups now involved with the technology
- Work with different groups to ensure that issues of IT-equity gets put on the agenda of senior policy makers and political leaders
- Be more aggressive in using new technologies explicitly to reduce existing social tensions and conflicts;
- To encourage scholars, researchers and analysts to put ICT equity at the top of their research agenda;
- To share experiences with colleagues around the world about their unique concerns over access to technology.
- Make analysts in industrialised nations, as individuals and groups, listen to and learn from colleagues around the world about their unique concerns



The WITFOR Process

The outcomes of WITFOR 2003
Vilnius Declaration covering
the Eight Themes

Review and research by eight Commissions to
review the progress of Projects and determine the
way forward from 2003 to 2005

Open discussion at Conferences around the
world for each commission leading
to the draft Gaborone Protocol

WITFOR 2005
Discussion and Finalisation of
Gaborone Protocol

Adoption of Gaborone Protocol
by UNESCO General Conference
2005

Exhibition

Parallel to this conference, there will be a state of art exhibition by ICT manufacturers and research organisations. The expectation is that many of the world's leading ICT organisations would be represented, thus presenting a unique opportunity to assess the investment opportunities in Botswana. A further dimension would be the holding of a "fringe" exhibition showcasing the country's tourist attraction to the international gathering.

WITFOR Secretariat

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August 2003

Sponsors and Donations

Funds are required both for the implementation of the Conference in Botswana in 2005 and for the preparatory activities which will be coordinated through an International Steering Committee. The preparatory activities include eight commissions of experts who will prepare research reports and present them at preparatory workshops in different continents. Apart from a financial contribution by the Botswana Government, the host, major sources of revenue towards this event will be contributions by the local ICT community, UN organisations, registration fees and, hopefully, sponsorships by multi-national corporations.

To make this event a unique success, generous sponsorships and donations are invited. The Conference will be a unique marketing opportunity as up to 800 ICT professionals, policy and decision makers will congregate. A major sponsor will have their name and logo distinctively shown on the Conference website as well as in the Conference brochures and will be allocated a prominent stall in the Conference Exhibition. Interested groups may contact the WITFOR Secretariat for information.



10 BEST REASONS TO VISIT BOTSWANA

- Africa's success story,
- Unspoilt wilderness and unlimited wildlife,
- The largest inland delta,
- The Kalahari Desert,
- An aviary of birdlife,
- The art galleries of Tsodilo,
- Liberal foreign exchange policy,
- State of the art health and medical assistance facilities,
- Enviably infrastructure,
- Peace and tranquility.

The Economy

Botswana has a vibrant and liberalised economy that has shown steady growth since independence. The traditional exports from the country are diamonds and beef. Efforts aimed at diversification have yielded encouraging results especially in tourism and manufacturing. This economic success has contributed to significant social developments, which include improved communication, access to clean water, basic health facilities and ten years of basic education. Solutions are yet to be found for the high unemployment - especially amongst the youth. The Pula is the unit of currency. One Euro is approximately six Pula. (August 2003)

