



**Atelier Mondial sur les Indicateurs d'Accès Communautaire aux TIC  
Cas de la République Démocratique du Congo**



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# **Atelier Mondial sur les Indicateurs d'Accès Communautaire aux TIC**

## **Cas de la République Démocratique du Congo**



### **An update on the growth of the DRC's telecommunications industry. ( TICs Implementation)**

- 1. Presentation of Democratic Republic of Congo**
- 2. Presentation of Telecommunication industry in DRC, Sites Covered, Type of used Technology.**



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## **Cas de la République Democratique du Congo**



### **1. Presentation of Democratic Republic of Congo**

**DRC: COUNTRY, PEOPLE, RESOURCES, ECONOMY**

**DRC: CHALLENGES**

**DRC: TELECOMMUNICATION INDUSTRY**



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Cas de la République Democratique du Congo**



**DRC COUNTRY**

**In the heart of Africa**

**The third biggest country of the continent**

**2 345 410 sq km**

**77 810 sq km of water**

**2 267 600 sq km of land**

**10 730 km of land boundaries**

**9 neighboring countries (Congo,  
CAR, Sudan, Ouganda, Rwanda, Burundi, Zambia,  
Angola, Tanzania)**

**47% of the africa's tropical forest**

**52% of the country covered by forest**

**Many mountains, lakes and rivers**



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## **Cas de la République Democratique du Congo**



### **DRC PEOPLE**

**Population: 60,000,000 inhabitants**

**Growth rate: 2,9%**

**Life expectancy: 48,93 years**

**Languages: french, lingala, swahili,  
kikongo, tshiluba**



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- DRC: Natural resources
- Copper
- Cobalt
- Coltan
- Industrial and gem diamonds
- Petroleum
- Gold
- Uranium
- Manganese
- Tin
- Iron
- Bauxite
- Germanium
- Silver
- Zinc

**DRC: Natural resources**  
**Radium**  
**Cadmium**  
**coal**  
**Timber**  
**Cofee**  
**Hydropower ( 25.5 %) of electrification in DRC**  
**Methane gaz**



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## **Cas de la République Democratique du Congo**



**Political stability**

**Election( planned for june 2005)**

**Building of basic infrastructures( roads, bridges,  
railways, airports)**

**Relaunch of production and exportation in agriculture  
and mining**

**Production of hydropower**

**Development of telecommunications**

- 1. Amelioration of telephone penetration ( 2 millions  
phone for 60 millions people)**
- 2. Building of a national fixed network 10 000 lignes for  
60 millions people !**
- 2. Enable the access of communautary population to  
NTIcs.**





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## Cas de la République Democratique du Congo



<b>Company</b>	<b>Internet Capability</b>	<b>Number of sites</b>	<b>Technology</b>
<b>OCPT ( Incubemt)</b>	<b>Acces Network</b>	<b>3</b>	<b>Fixed Copper</b>
<b>INTERCONNECT</b>	<b>ISP</b>	<b>6</b>	<b>WLL</b>
<b>MICROCOM</b>	<b>ISP</b>	<b>3</b>	<b>WLL</b>
<b>ROFFE HI-TECH</b>	<b>ISP</b>	<b>3</b>	<b>WLL</b>
<b>SADC</b>	<b>ISP</b>	<b>1</b>	<b>WLL</b>
<b>GTS</b>	<b>ISP</b>	<b>1</b>	<b>WLL</b>
<b>AFRICANUS</b>	<b>ISP</b>	<b>1</b>	<b>WLL,DIAL-UP</b>
<b>VODACOM</b>	<b>ISP (9.6 kbs)</b>	<b>78 CITIES</b>	<b>GSM 900, 1800</b>
		<b>NATIONAL COVERAGE</b>	
<b>CELTEL</b>		<b>60</b>	<b>GSM 900,1800</b>
		<b>NATIONAL COVERAGE</b>	



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**Quick expansion of telecommunication infrastructure since 1997 mainly in the mobile area ( GSM, WLL, ISP) by getting the opportunity to take under control a big market ( 2.000.000 phones lines or 3.3 % of market penetration)**

### **ISP**

**CKT, GTS, AFRICANUS, AFRITEL, VODACOM, CELTEL, INTERCONNECT, PACONET, CITRACO, MICROCOM, ROFFE, UNIVERSITY**



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**Internet Connection in Democratic Republic  
of Congo.**



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## **Cas de la République Démocratique du Congo**



### **1. Interconnect**

**[www.ic.cd](http://www.ic.cd)**

**Coverage: Kinshasa, Lubumbashi, Matadi**

**E-mail: [Chris@ic.cd](mailto:Chris@ic.cd)**

**Features: wireless, dial-up, web hosting**

**Sector: Commercial**

**Connectivity: Satellite, 2 Mbps via UUNet Belgium**



# **Atelier Mondial sur les Indicateurs d'Accès Communautaire aux TIC**

## **Cas de la République Démocratique du Congo**



### **1. Raga Net**

**[www.raga.net](http://www.raga.net)**

**Coverage: Kinshasa, Lubumbashi, Mbuji-Mayi**

**Features: wireless, IP radio, VoIP**

**Sector: Commercial**

**Connectivity: Satellite, 2 Mbps via Data Marine UK.**



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## **Cas de la République Démocratique du Congo**



### **1. Roffe Hitech**

**www.**

**Coverage: Kinshasa, Lubumbashi, Mbuji-Mayi**

**Features: wireless, web hosting, VoIP**

**Sector: Commercial**

**Connectivity: Satellite, via New York.**



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## **Cas de la République Democratique du Congo**



**Afrinet**

**[www.afrinet.cd](http://www.afrinet.cd)**

**E-mail: [paras@afri.net.cd](mailto:paras@afri.net.cd)**

**Coverage: Kinshasa**

**Features: wireless, web hosting**

**Sector: Commercial**

**Connectivity: Satellite UUNet Belgium.**



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**Microcom**

**[www.microcom.cd](http://www.microcom.cd)**

**E-mail: [microcom@microcom.cd](mailto:microcom@microcom.cd)**

**Coverage: Kinshasa, Lubumbashi, Mbujimayi,  
Equator**

**Features: wireless, web hosting**

**Sector: Commercial**

**Connectivity: Satellite via New Skies USA.**





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## **Cas de la République Démocratique du Congo**



**Africanus**

**[www.africanus.cd](http://www.africanus.cd)**

**Coverage: Kinshasa**

**Features: wireless, Dial-Up, web hosting, VoIP**

**Sector: Commercial**

**Connectivity: Satellite via.**



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## **Cas de la République Democratique du Congo**



**University Backbone**

**[www.africanus.cd](http://www.africanus.cd)**

**Coverage: Kinshasa University, Lubumbashi  
University**

**Features: Optic Fiber, web hosting**

**Sector: Government ( Cooperation with Belgium)**

**Connectivity: Satellite via telecom plus**



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### **TIC Government Policy**

- .The National Parliament has set up the frame law to rule the Telecommunication business in DRC.**
- . The Frame-Law of Telecommunication n°013-2002 published by the President on October 16, 2002**
- . Article 39 is establishing the Universal Service :Any one's right to receive a telephone basic service , telegraph, Public phones at a reasonable cost wherever he is located in DRC ( Rural and distant areas) and the principle of Fund for Universal Service Development.**



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**Etat de lieu of Fund for Universal Service Development:**

**Not Operationnel after 2 years:**

**Reason: Fund to be raised for the Public Operator which is  
Public Operator ( Lack of minimum infrastructure).**

**The Public Operator has been assigned also the building of  
the REFERENCE NETWORK**



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**Function of the Reference Network is to provide the « highway » of  
Telecommunication ICT within the country:**

- 1. Quick deployment and Interconnection of Telecommunications operators (ISP)**
- 2. Implementation of special government telecommunications network (Administrative, Police, Security, Immigration, Customs...)**
- 3. Specials network for Universal services of Telecommunications**
- 4. Commercial Networks (Transportation, e-commerce)**
- 5. Banking Network ( Public Finance, Credit card usage, Debit card, International banking)**
- 6. Education network ( Virtual University)**
- 7. In fact: The Network for next election in DRC.**

**« A country with enough telecommunications infrastructure is automatically coming worldwide accessible and as consequence coming a part of international market »**



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The Fixed infrastructure of OCPT is in fact obsolete, old generation of switch, very low capacity (Kinshasa: 10 000 lines for 60 millions people!).

The development of ICT has to be implemented by the Public as Commercial Operators.



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## Cas de la République Democratique du Congo



ISP ( Commercial)	# Internet users ( Declaration Gov	# Internet users ( Real)	# DCC
OCPT	0	0	
Interconnect	600	3000	40
Roffe Hi-Tech	110	417	18
Microcom	100	100	17
Africanus	---	202	--
CKT	---	500	
Raga Net	100	100	20
Afrinet		1000	--
University backbone		45	4
Total Population	60 000 000	5319	99
# user / PC		0.001 %	0,0002 %



## OCPT CDMA

- OCPT is working with HUAWEI in way to implement a national CDMA 450 mhz network
- First stage: 6 provinces will be connected
- 700000 lines capacity





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- CKT : Congo Korea Telecom
  - Implementation of A Optic Fiber Fixed Network within the country: 1000000 lines for Kinshasa, 1000000 lines for interior cities, 81000 leasing lines, 160 000 public phones, 536 000 internet lines over 5 years.



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**ICT and EDUCATION**

**Project: VIRTUAL UNIVERSITY OF CONGO**



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## Cas de la République Démocratique du Congo



### **The digital divide: Case: Université Virtuelle du Congo**

Will the global information society reinforce existing inequalities and create new ones?

....or will it just bridge the gap between ‘haves’ and ‘have nots’ , since information is now the main economic resource, and it is freely accessible for everybody?



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## **Cas de la République Démocratique du Congo**



**Main partners: Université de Kinshasa (UNIKIN), KU Leuven, EuroPACE**

**Partner universities (and higher education institutions) in Congo**

**Partner universities in Belgium and Europe**

**Industry in Congo (FEC) , Belgium, Europe**

**Support by governments (e.g. VLIR-CIUF) and EU**

**Collaboration with African Virtual University (AVU) and Global Service Trust Fund (GSTF)**



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## **Cas de la République Democratique du Congo**



### **Academic goals:**

**to solve basic problems (in line with the strategic plan of the UNIKIN):**

- insufficient capacity to meet the societal demand for student places**
- lack of basic infrastructure**
- training and relief of academic staff**
- isolation from the academic and scientific world**

**Educational applications of a broadband Internet connection and videoconferencing, based upon the needs and interests formulated by the UNIKIN-faculties.**

**A. Internet connection:**

- Wireless connection between campus and (asymmetric) satellite link**
- Glass fiber backbone for campus network**

**B. Videoconferencing**

- two way and multipoint with foreign sites**
- audio feedback from domestic sites**



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*Broadband access to the web. Connection with the academic and scientific world for professors, researchers and students*

**1.Virtual libraries, scientific data bases, research papers**

**2.Online courses**

**3.Virtual labs**

**4.PhD programs and scientific seminars**

**5.Professional training and lifelong learning**

**6.Participation in the global societal debate**

**7.On campus: overcrowding of lecture theatres**

**8.Between campus and downtown (FIKIN):**

**-students mobility**

**-continuing education**

**9.Between campus and periphery:**

**-teachers mobility**

**-continuing education**

**10.Between campus and country:**

**-interactive videoconferencing with Lubumbashi and others**



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### **Backbone University of Kinshasa**

**# DCC: 7**

**# PC: 142**

**# Imprimantes: 17**

**# Scanner: 5**

**# Fax: 2**

**# Population: 40 000 inhabitants**

**# user / PC: 100**

**Average # PC / DCC: 20**

**Average Connection Cost: 1 \$ US per hour**

**Access Time: 7 am to 11 pm**



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## **Cas de la République Democratique du Congo**



### **Cost Indication:**

**PC Cost: 800-1000 \$ US per PC**

**Scanner: 100-300 \$ US**

**Imprimante: 100-1000 \$ US**

**Fax: 100-500 \$ US**

**Antenne Wireless Connection : 1500 \$ US**

**Monthly Connection with WLL: 25-30 \$ US per poste**

**Monthly Connection with dial-up: 75 \$ US**





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- Electric Power Availability.

The development of Telecommunication industry is linked to the availability of electric power ( Low price to kwh, Continuity of service supply 24h, 365 day, large national coverage)

DRC: Important producing country of electric power (Inga 1, Inga 2, Zongo, Mwadigunsha...) mainly to provide energy to mining and administrative areas.

The solution to provide a large national coverage is the  
**DEVELOPMENT OF MICRO HYDROELECTRIC PLANTS**

**\*\*\* 250 SITES IDENTIFIED COVERING ALL THE NATIONAL TERRITORY .**

Site developped or in project: Butembo, katende, Ngungu ( South African technology and Finance).



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- Improving connectivity and promoting ICT penetration between different centres at lower cost
- By installing the National backbone
- Making Universal Fund Effective
- Exemption of Customs Tax on PCs
- Connecting the DRC to SAT 3 ( Negotiation in process with Telkom South Africa)
- Involvement of International Investors, Organisation in the Telecommunication infrastructure ( ICT, Network development, Added value Network) TELECOM SURPLUS



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**THANK YOU**