

DRC-IX IN A SECOND ROLE FOR ITS GROWTH



Aout 2024

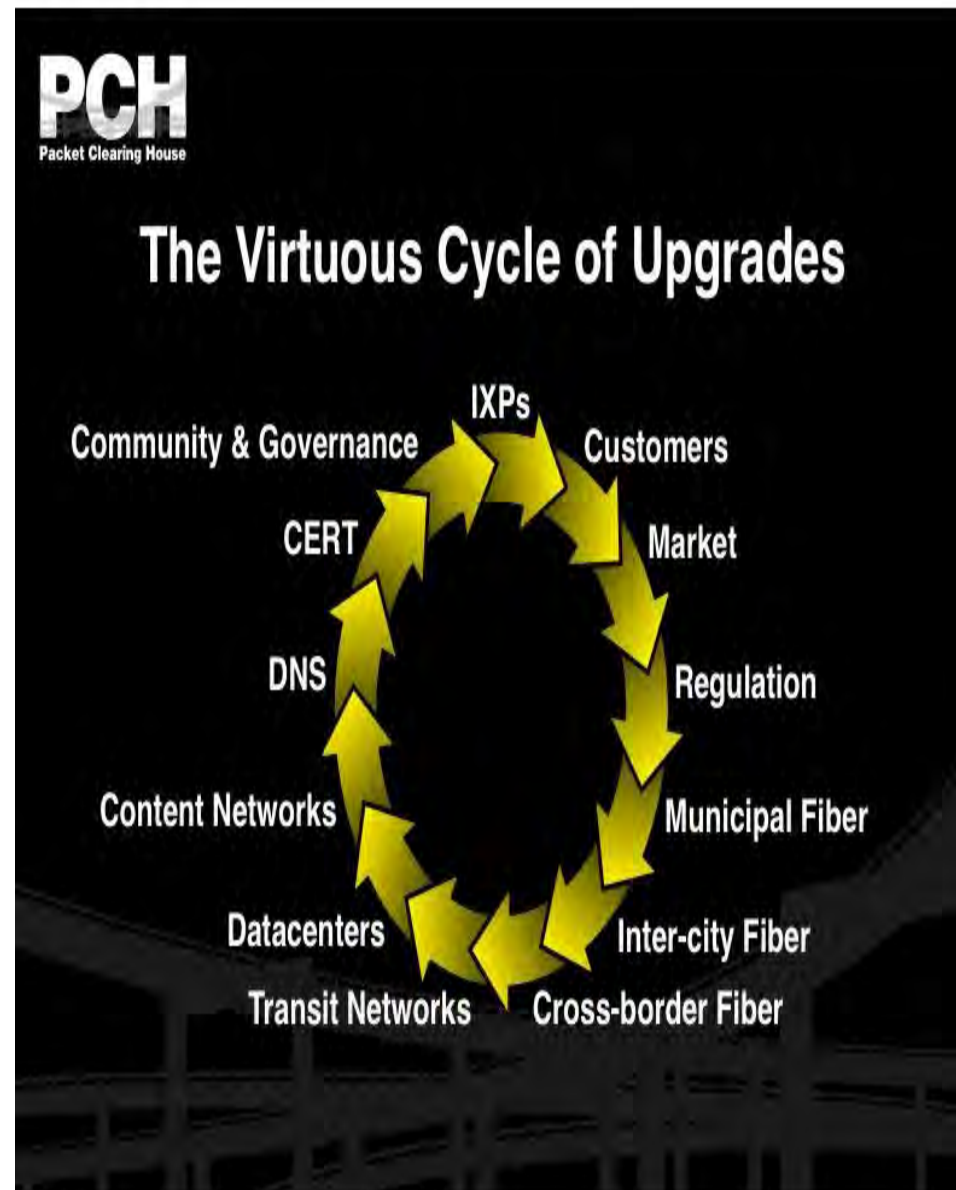
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CONCEPTS

- MATURE IXP: an operational IXP through self-financing
- NON-MATURE IXP: an operational IXP through donations and subsidies
- MATURE PEERING ECOSYSTEM: is an Internet ecosystem characterized by :
 - A strong ISP presence
 - A strong transit provider presence
 - A highly developed digital transport infrastructure
 - A strong content provider presence
 - A strong presence of digital service providers
 - Regulation adapted to the Internet industry evolution
 - A highly developed hosting infrastructure.
 - Strong end-user demandIn this ecosystem, the IXP easily plays its traditional role of keeping local traffic local.

- UNMATURE PEERING ECOSYSTEM : is an internet ecosystem characterized by :
 - Low ISP presences
 - Low transit provider presence
 - Less developed digital transport infrastructure
 - Low content provider presence
 - Low presence of digital service providers
 - Regulation poorly adapted to the evolution of the Internet industry
 - Less developed hosting infrastructure.
 - Low end-user demandIn addition to the traditional role, IXP is called to play the second role which is a catalyst so that the Internet ecosystem can reach maturity through the growth of its major players.



BREVE PRESENTATION DE RDC-IX



DRC-IX is a project initiated by ISPA-DRC to endow the Democratic Republic of Congo in the medium and long term with level 2 and community Internet exchange points.

For the mid term:

KINIX

- Launch: November 2012

LUBIX

- Launch: October 2019

GOMIX

- Launch: September 2021



PREMIER PAS DE REALISATION



EXPERIENCE 1: 2003

Fully funded by the project "Catalysing ICT Access in Africa " (CATIA) under the AFRISPA leadership .

- KINIX was hosted by an operator
- The Operating time was 6 months

Reason for failure:

- No trust between members
- IXP is hosted in a non-neutral location
- insufficient knowledge about the BGP routing protocol



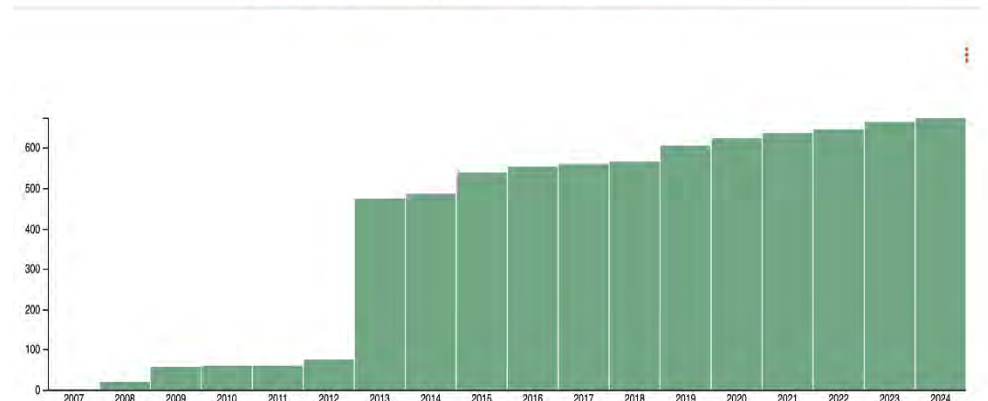
INTERACTION WITH ISP AND REGULATION

EXPERIENCE 2: 2012

- Reference framework, network equipment and materials
 - Neutral location
 - Server room: Dimensions: 3.80mX2.20m
 - 1 rack of 42 U
 - 1 Switch layer 3 et 1 router : Member donation
- Interaction with Régulation:
 - Application for operating license: Not delivered
 - Telecom Laws: silent
- Interaction with ISPs:
 - 4 ISPs connected
 - Afrinic IP Address Allocation Rate Growth
 - Connection only by wireless link
 - Technical management
 - No IXP Management Subnets
 - Traffic < 1 Mbps
 - Monitoring tool installed in a PC connected to the IXP router
 - Added values
 - No attraction: No content, no services
 - Maturity rate
 - Operation support: ISPA-DRC
- Operability
 - No redundancy in power provider
 - Growth: 13 months later, decrease in number of peers
- Training on routing in an Internet network with the BGP protocol
 - 36 IT trained (ISP, bank, tax administration and university)



IPv4 issued Cumulative per year (/24s) in Congo (the Democratic Republic of the)



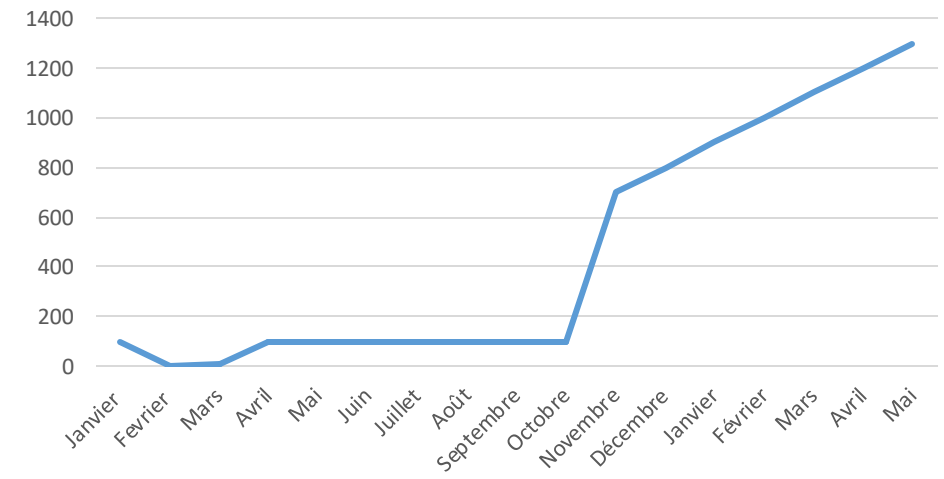
INTERACTION WITH CDN AND DIGITAL CARRIERS

EXPERIENCE 2: 2016

- Interaction with the first CDN: Traffic >700 Mbps
- Interaction with the digital carriers (optic fiber)
- 2 racks 42 U
- Increase in the members number of members: 6 connected operators
- Requirement for electrical power
- Start of Maturity (Self-financing of operating costs)



KINIX TRAFFIC /Mbps



INTERACTION WITH THE INTERNATIONAL CDN , LOCAL AND SERVICE INTERNET SERVICES




EXPERIENCE 2: 2018

Realization 3:

- Changement de cadre de référence :
 - Change of reference framework: 10,90 m x 5,60m
- Acquisition: Network equipment and materials :
 - Acquisition :1 rack more ISPA-DRC Member donation : au total 3
 - Acquisition : 2 switch de 10G port (ISOC donation)
- Added value
 - 2 CDN (GGC et Meta) and 1 CDN local (INFOSET)
 - Traffic > 6 Gbps
- 8 opérateurs connected
- Power provide: redundancy ensured: automatic
- Connectivity
 - 6 operators connected by optical fiber
 - 2 operators connected by radio link



DRC-IX EXTENSION

		Actuellement
	Peers number	24P=14 ISP+8CDN (5 in et 3 locaux)
	Traffic Peak	≅ 82 Gbps
	Number Optic Fiber link	10
	Management support	10/10
	Peers number	10P=7ISP+3 CDN In
	Traffic Peak	≅ 40 Gbps
	Optic fiber link	5
	Management Suuport	10/10
	Peers number	8P = 6P+2 CDN In
	Traffic Peak	≅ 30Gbps
	Optic fiber link	3
	Management support Pris	10/10

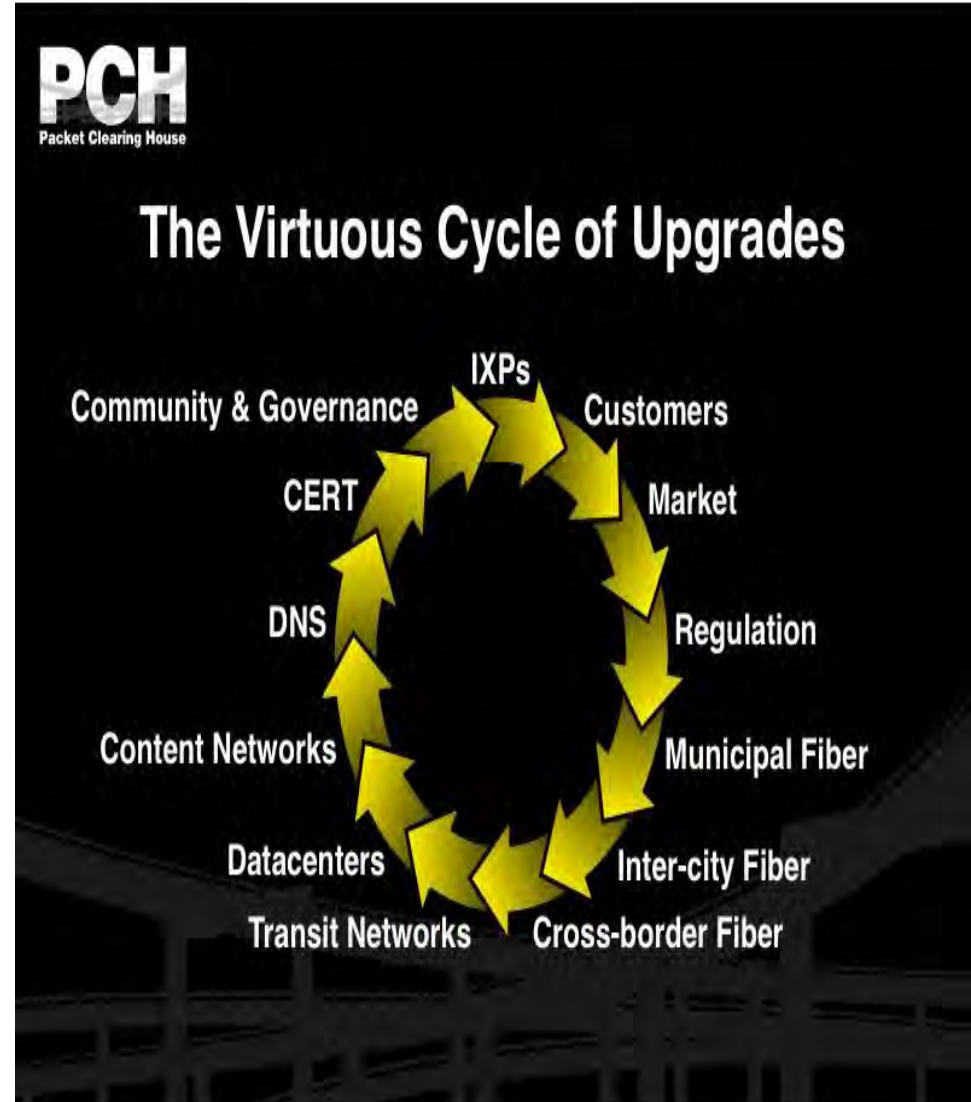
INTERACTION WITH DATA CENTER AND REGULATION

- Interaction with Data-center :Resilience
 - Signing of hosting contract with RAXIO
 - Signing of hosting contract with OPENACCES
- Interaction with the Irégulator :
 - Official recognition of the RDC-IX Project by the ARPTC



THE FUTURE

- Interaction with public administrations :
 - Support in the IP address allocation process
 - Support in the process of migrating IT assets to information systems
 - Interaction with developer communities
 - Support in capacity building
 - Organization of a hackathon to award the best digital applications of a community and general public nature
 - Support in the hosting process
- Interaction with the end-users
 - Awareness of Internet use
- Implementation of two new Internet exchange points by 2027



ISPA-DRC /RDC-IX :

- E-mail: inf@ispa-drc.cd

- Peering :

KINIX : AS : 37431

LUBIX: AS: 37785

GOMIX: AS: 37788

Thank you, Merci