



National Research & Educational Network of Ecuador

CEDIA

Consorcio **E**cuatoriano para el
Desarrollo de **I**nternet **A**vanzado

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Agenda

1. A quick overview of CEDIA and its network
2. Some factors that catalyzed the creation of CEDIA's network
3. Some results and current status of the network and the key factors that helped CEDIA started
4. Some weaknesses and what are our current challenges

Location



CEDIA



“A Consortium of Universities created to promote and coordinate the development of advance research networks focus in academic, scientific and technology development of Ecuador”.



Some factors that catalyzed the formation of CEDIA

- **May 2001** – ESPOL team started exploring the possibilities to connect to the international academic networks
- **March 15, 2002** – first national meeting to discuss about the next generation of Internet and Internet2, in Guayaquil, 38 Organizations participated in this meeting.
- **March 26, 2002** – second meeting, with Internet2 - US, CUDI - Mexico and RNP – Brazil, @LIS
- **September 18, 2002** – CEDIA was officially created: 7 Universities, 2 Research Institutions and 2 Government Agencies.
- **October 2002** – Ecuador signed the MoU with UCAID – Internet 2, at the Internet2 member meeting in Los Angeles.



Some factors that catalyzed the formation of CEDIA

- January 10, 2003 – CEDIA's Statute was officially published by the Ministry of Education of Ecuador.
- **June 2003** – Ecuador joins the CLARA – Phase A, Project
- December 2003 – WSIS preparatory meeting organized by OAS in Quito, included a session on Advance R&E Networks helped us raise awareness about connectivity to advance academic networks
- **February 2004** – first technical workshop with NSRC – UO support
- **February 2004** – started negotiations with Fondo de Solidaridad to get access to the national fiber optic infrastructure.



Some factors that catalyzed the formation of CEDIA

- **March 2004** – CEDIA signed the participation in CLARA – Phase B, Project.
- **September 2004** – First tender call for providing connectivity to CEDIA members
- **October 2004** – selection of the ISP for connectivity of CEDIA members and its national backbone.
- **October 2004** – CEDIA's 3 main nodes were implemented, thanks to a donation from NSRC – UO
- **November 2004** – international tender for providing CEDIA's connectivity to CLARA network
- **December 2004** – CEDIA's national virtual network started as a network based on a provider



Some factors that catalyzed the formation of CEDIA

- December of 2004 – CEDIA signed an Inter Institutional Agreement with Fondo de Solidaridad
- January 2005 – selection of the international carrier for connecting CEDIA to CLARA
- **March 2005** – international connection started operation from CEDIA to CLARA
- December 2005 – Ecuador started to look for another fiber optic international connection.
- May 2006 – CONATEL started to negotiate the landing site in the coast of Ecuador
- **December 2006** – Ecuador signed the contract for the new fiber optic with a consortium of companies, including CEDIA's current provider



Some factors that catalyzed the formation of CEDIA

- March 2007 deployment of new fiber cable started
- **November 2007** fiber cable was operational
- January 2008 a third connectivity tender for CEDIA was called
- March 2008 – the second 4 years strategic plan was jointly established
- May 2008 – Third connectivity contract for 620 Mbps for internet and 1 Gbps for the national network.
- January 2009 – first call for research and development of applications using CEDIA's network

Topology - 2006



Topology - 2008



Some results and status

- The first national tender for bandwidth ended with a 69% reduction in prices for CEIDA's members
- From US\$ 117.000 monthly for aggregated 17 Mbps (asymmetric – 5 different providers) – US\$ 6.88 per Kbps, down to US\$ 3.17 per Kbps
- Today any member pays US\$ 0,19 per Kbps – 620 Mbps (full duplex, fo)
- Following tenders average 25% reduction in bandwidth prices and around 27% in equipment prices
- An average increase of 680% in capacity for all members, and standardize the minimum bandwidth.

Some results and status

- A flat rate to all Members, no matter where they are located within the country
- US\$ 0 costs for last-first mille
- US\$ 0 costs for the national academic network
- Local (Guayaquil) RedCLARA POP
- The national academic network scale up from 10 Mbps to 1 Gbps – free
- Bandwidth to redClara scale up from 10 Mbps to 34 Mbps in 2 years
- Bandwidth usage in 57% after increase to 540 Mbps
- First national call for research and development of applications over CEDIA network



Key factors that helped CEDIA get the network up and running

- The technical workshops with NSRC – UO helped created an important critical mass
- The first version of national backbone – a Delta network, also created with NSRC – UO support
- CLARA project catalyzed the plan of joining other national research and educational networks.



Weaknesses and other reflections

- First mile still a burden to take advantage of national fiber network from Fondo de Solidaridad
- Few active research groups (multi-university groups) of scientists working together
- Scarce participation at high-end science and technology research

What are our current challenges

- Exchange of content and applications with other NRENs.
- Multi and Trans disciplinary project development with Ecuadorian Scientists and Technicians. Some areas of interest:
 - Tele medicine
 - Tele education
 - Digital Libraries
 - El Niño event
 - Material Science
- Participation in high-end science and technology research – mobility of scientists and researchers
- Next version of CEIDA's network to take advantage of the agreement with Fondo de Solidaridad.



THANK YOU !!!