

# Lanka Education and Research Network

## Overview of LEARN and NOC Operation Updates

2013

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(Network/Systems Engineer)

# LEARN

- Lanka Education & Research Network
  - NREN of Sri Lanka
  - Private company owned by 16 state universities include UGC
  - Managed by BoD
    - Members from primary member institution
    - Chairman from UGC

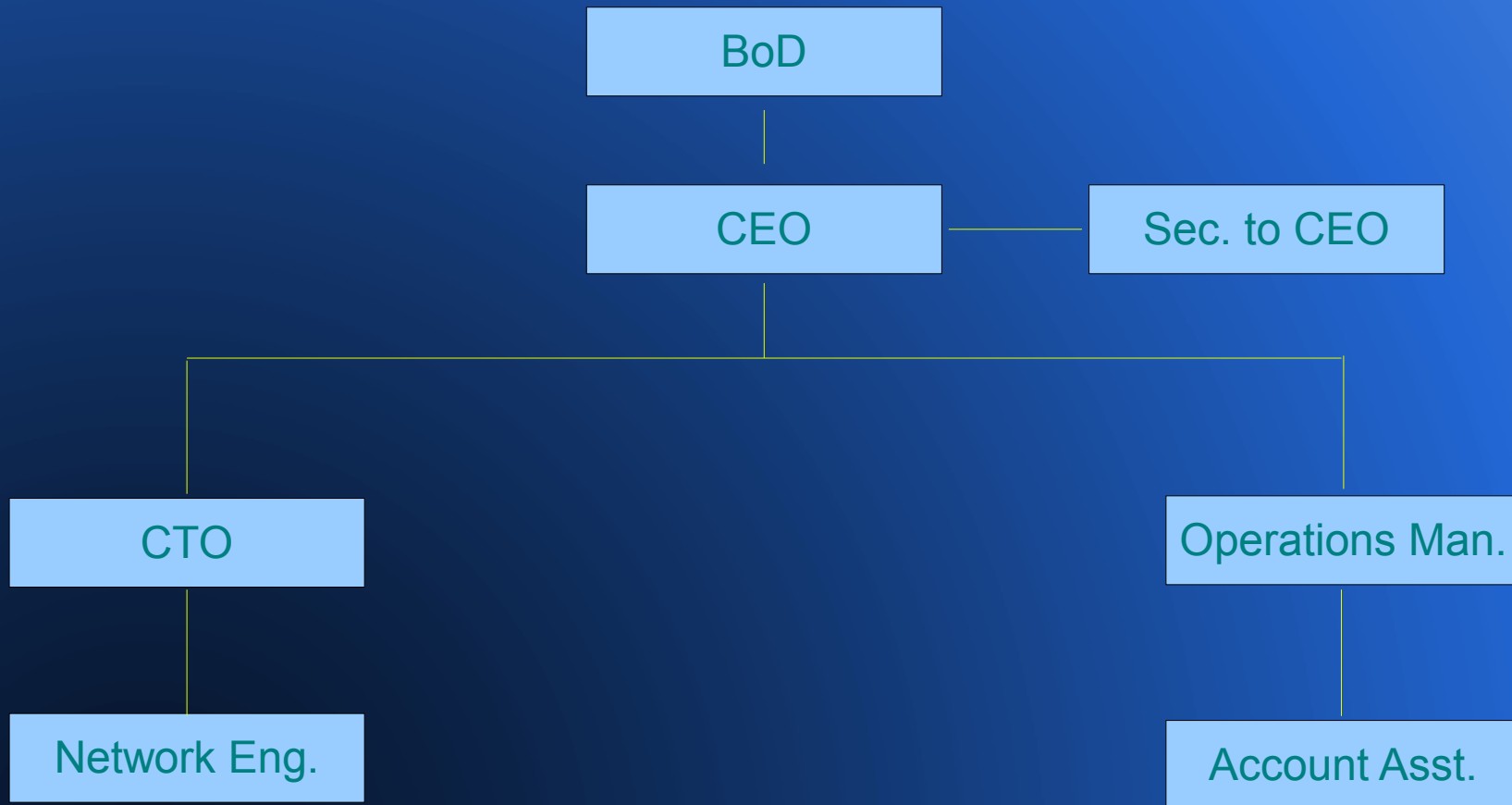
# Human Resources

- Chief Executive Officer
  - Prof. K.S.Walgama (ceo@learn.ac.lk)
- Administrative staff
  - Operations Manager
    - Mr. Rajeewa Abeygunarathna (rajeewa@learn.ac.lk)
  - Account Assistant
  - Sectary to CEO
    - Mr. Dinesh Gunawardana (dinesh@learn.ac.lk)

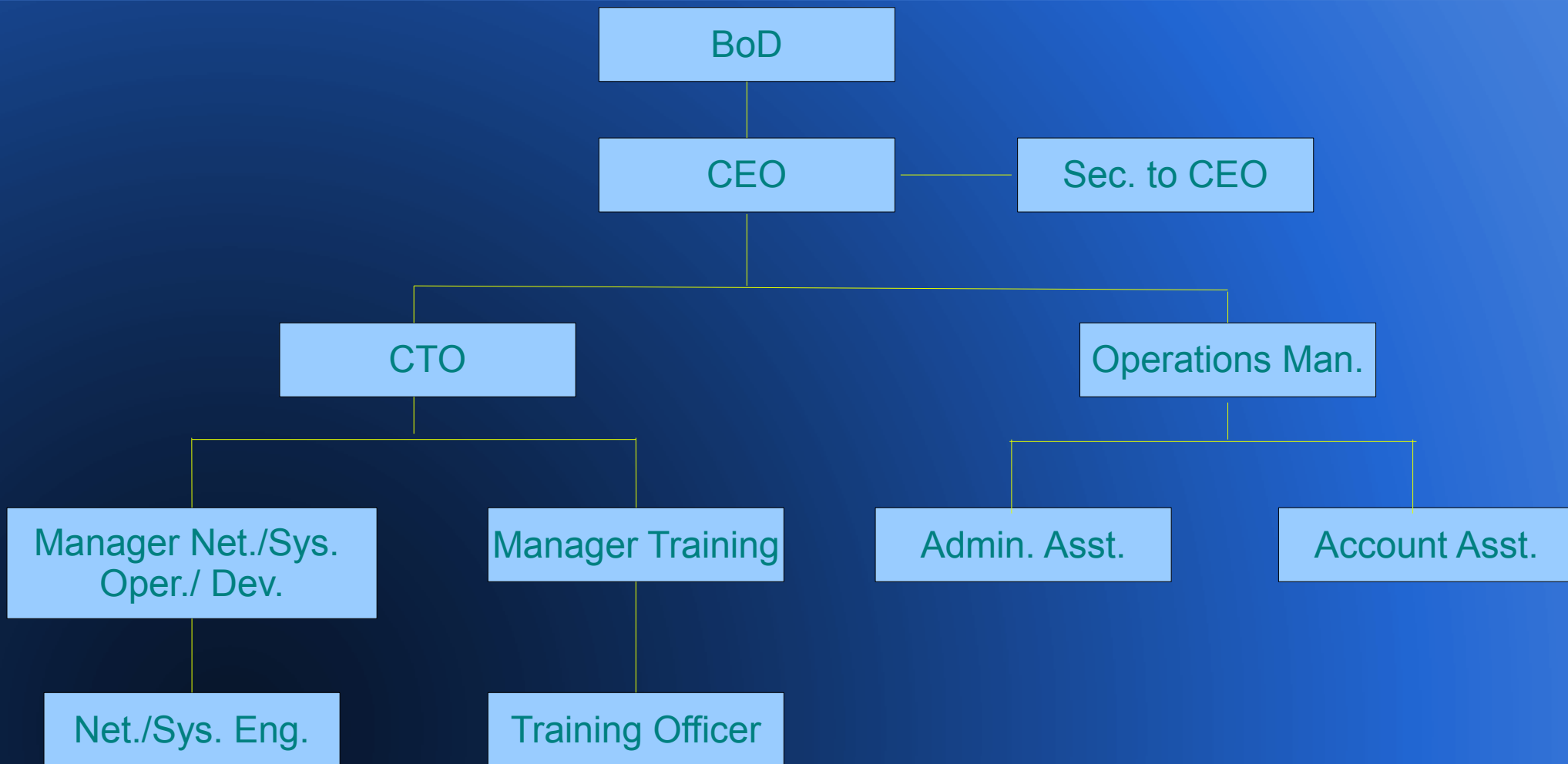
# Human Resources (cont.)

- LEARN NOC Staff
  - A Network engineer (noc@learn.ac.lk)
    - Mr. Senevi Herath (senevih@learn.ac.lk)
  - Planing to recruit another engineer
- APAN Secretariat
  - Three officers

# Organization



# Organization (proposed)



# Backbone

- Local Connectivity
  - VPLS network leased from Sri Lanka Telecom
  - 500 Mbps or less
  - 45 institutes connected
  - <http://www.learn.ac.lk/ibw-1.5Gbps>
  - Ipv6 enabled backbone
- International Connectivity
  - Commodity Internet - 1.5Gbps via SLT
  - TEIN4 - 45 Mbps

# Internet bandwidth at a very low rate

- Total bandwidth 1.5Gps (1.65Gbps with 10% burst)
  - 68\$ per 1Mbps
  - The lowest in the country
  - Because of huge bargaining power
- Spare bandwidth (700Mbps)
  - High Internet access performance



# Network Equipments

- Access Routers (Managed by LEARN)
  - at the boarder of member institute
- Core Devices
  - two boarder routers for peering with TEIN4 and Internet
  - Servers for (DNS, Web, SIP gateway, Mail relay, spam filtering, etc)
  - Global Google Cache node (GGC)
    - Google/Youtube cache (serve over 300 Mbps)

# Services

- Core Network Services
  - DNS, Domain registration (.ac.lk)
  - Mail relaying, Spam filtering
  - SIP Gateway
  - Web hosting
- Under Experiment
  - Eduroam
  - Cloud Services (Open Stack - PaaS)

# LEARN NMS

- MRTG for Link Utilization
  - 5 minute resolution
  - <https://lnms.learn.ac.lk/mrtg/>
- Cacti is the LEARN NMS
  - Weathermap, thresholding (thold), monitor
- Traffic plots generated by PHP scripts
  - More detail than MRTG
  - 1 minute resolution
  - <https://lnms.learn.ac.lk/traffic/>

# NOC Operations

- Maintenance of Core Equ. / Core services
  - Core equipments (hardware)
  - Standard network services
  - Monitoring network and its services
  - Security related matters
- Maintenance of backbone
  - Coordinate with Sri Lanka Telecom
- Upgrades/Developments
  - Bandwidth, software and hardware

# NOC Trainings/Workshops

- Local Trainings/Workshops
  - local network related training for the technical staff of LEARN member institutes
- LEARN is willing to provide technical resources for local researches
- LEARN is willing support for development of application which runs on REN

Thank You