

Connecting schools  
&  
Collaboration between education and  
research networks

Danish experiences

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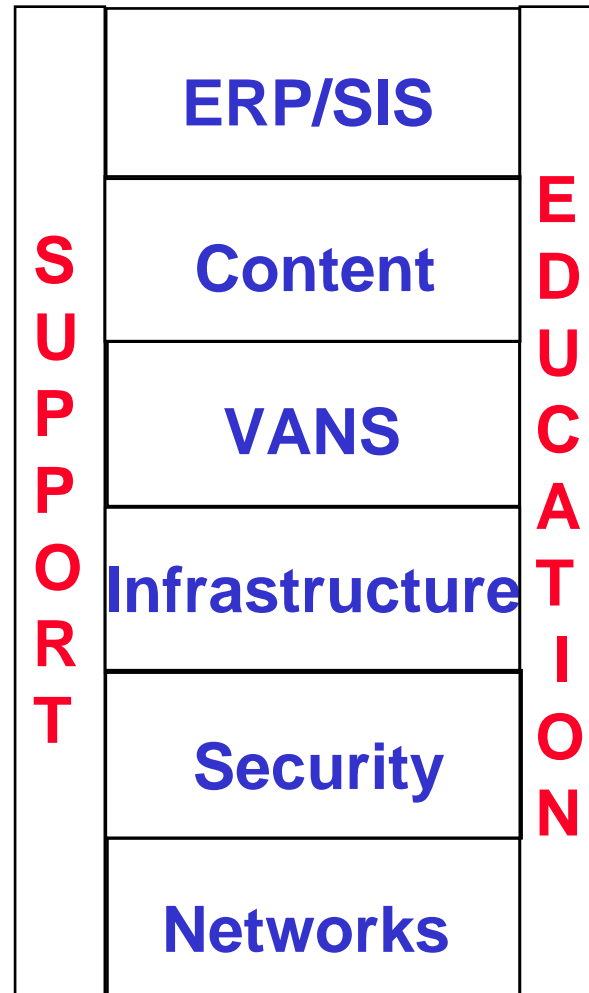
# Overview

- UNI-C and our products to Education and research
- The two networks
- Similarities and **differences**
- Collaboration

# UNI-C

- Danish computing center for education and research
- Owned by the ministry of education
- Aim: Providing IT-services for education and research
- Help introduce and integrate the use of ICT in education

# Product portfolio



## Two separate networks

- Sektornet
- Education (K-12)
- Forskningsnettet
- Universities (+12)

Collaboration ?

## Different sizes

- **Sektornet**
- 2.200 (3.000) institutions
- 600.000 users
- Budget : 7.5 m Euro
- FTE : 22
- 50 % user financing
- **Forskningsnet**
- 110 ( 110) Institutions
- 200.000 users
- Budget : 2.5 m Euro
- FTE : 8
- 100 % user financed

# Modes of operation

- **Sektornet**
  - ISP : TDC
  - Division of work between UNI-C and TDC
  - TDC responsible for connection (DSL) and surveillance
  - UNI-C responsible for router configuration and everything 'above'
  - Standardize on equipment
    - - not configuration !
- **Forskningsnet**
  - ISP : UNI-C
  - Backbone a combination of leased lines and 'dark fibres'
  - Division of work between UNI-C and the users

# Security model

- **Sektornet**
  - A routerbased preconfigured firewall
  - No content filtering
  - Advanced and highly flexible
  - Administered and maintained by UNI-C
  - Based on the schools individual needs
  - CERT
- **Forskningsnet**
  - No security mandated
  - The institutions establish sec. solutions themselves
  - CERT

# Infrastructure and services

- **Sektornet**
- Basic: dns, ftp, dhcp, Usenet news
- Infrastructure:
  - SSO
  - Central user admin.
  - Content distributioun
  - Web hosting
- **VANS**
  - Conferencing
  - Databases
  - Content
  - Open source distribution
  - - and more
- **Forskningsnet**
- Basic: dns, ftp, dhcp, Usenet news
- Infrastructure :
  - videoconferencing

# Support

- Sektornet
  - Decentralized
  - 3 levels
  - 1: Support center
  - 2. UNI-C support
  - 3. Product specialist
    - UNI-C or 3rd party
- Forskningsnet
  - Decentralized
  - Most issues handled locally at the institutions
  - Backbone issues to UNI-C

# Education

- Sektornet
- 2 day introduction for each school  
(2 superusers)
- Support
- FAQ – self service
- Forskningsnet
- D.I.Y.

# Collaboration

- DNS and other basic services
- 'Hidden collaboration' – sharing of competencies
- Backbone synergies has been investigated but not more
- Last mile .....
- Security solutions are different
  - - and so are the views/knowledge on security
- Support structures are very different
- VANS have been viewed as too different
- - and the users are very different

# Drivers for enhanced collaboration

- Cost effectiveness
- Sektornet not able to compete at the highest bandwidth
- Consolidation at local level
- Different focus :
  - Sektornet : Services ↑
  - Forskningsnet : Connectivity
  - → Comparative advantages

Could we do more ?

Should we do more ?

How should it be done ?