Country case study: The Netherlands

**Ivo Essenberg, ITU
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Agenda

- **Introduction to the Netherlands**
- **Networks in the Netherlands**
- **Legislation in the Netherlands**
- **Conclusions**

The Netherlands: the basics

- **41'500 km² area**
- **16 million inhabitants**
- **Mainly a services economy (74% of GDP)**
- **Trading nation**
  - ➤ **Trade revenue: 116% of GDP**
- **Founding member of EU, CEPT, NATO and Council of Europe among others**

The Information Society in the Netherlands

- **1999: USD 3.5 billion investment in telecommunications infrastructure**
- **8+ million fixed line subscribers**
- **6.2 million cable TV subscribers**
- **10.7 million mobile phone subscribers**
- **3.8 million Internet users**
- **2.1 million Internet hosts**
  - ➤ **6th in the world with host density of 1'360 hosts per 10'000 inhabitants**
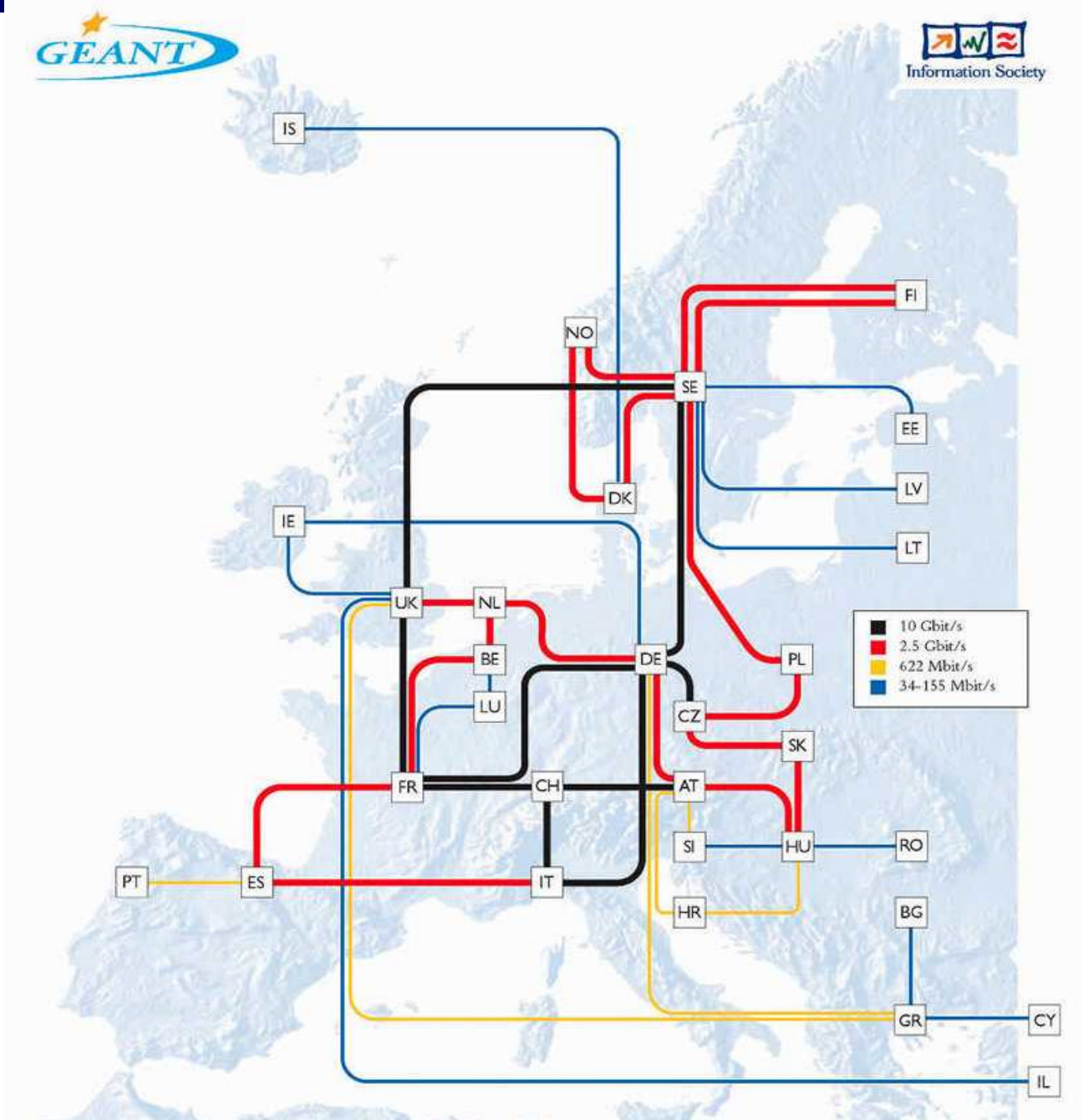
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The Netherlands on the Internet

- **Home to 7 of the 78 European Internet Exchange points**
- **5 of the top 10 international Internet routes connect to Amsterdam**
- **Amsterdam (AMS-IX):**
  - **2nd largest international Internet hub**
  - **One of 5 European cities with 5+ MANs**
- **Information Society Index:**
  - **NL: 6th in 2002**
- **Participant in DANTE's GEANT network**

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Telecommunications market

- Independent regulator since 1998
- Open to competition (except local calls)
- 5 mobile operators
- 95 licensed operators for fixed service
- 60 authorized international carriers
- 130 Internet service providers
- Availability of a network for emergency response (Nationaal NoodNet)

Network organizations

- **OPTA: independent regulator**
  - ➤ **Interconnection fees, frequency allocation**
- **SIDN: Dutch domain name registry**
- **NLIP: Internet providers**
  - ➤ **Code of conduct**
- **VECAI: cable operators**

Network vulnerabilities

- ● "Home" of the Kournikova virus

- ● Increasing number of probes

- ● Rising number of DoS attacks

- ● Use of the Internet for critical data exchange
  - ➢ Water level management

Physical vulnerabilities

- **One cut in optic cable: north eastern Netherlands without communications**
- **AMS-IX:**
  - ➤ **Until 2002, in one single location**
  - ➤ **Now, 4 locations**
  - ➤ **Redundant links**
- **SWIFT:**
  - ➤ **Reliance on Global Crossing**

User information

- **Action at European level**
  - ➢ **Resolution 15/1/02 calls for strengthening of information and education campaigns to increase awareness of network and information security**

- **National level**
  - ➢ **SurfOpSafe: education at user level**
  - ➢ **CERTs: SURFNET, UNICERT, CERT-RO**

Regulation

● **European Parliament**

  ➢ **18 directives on Open Network Provision**

  ➢ **Electronic signatures**

  ➢ **Data protection and privacy**

● **National level**

  ➢ **OPTA: Supervisor of TTPs**

  ➢ **Use of existing laws**

Ongoing activities (1)

- ## International level
  - ### CoE: Cyber crime convention
  - ### E-Europe initiative of the EU
    - 'Creating a Safer Information Society by Improving the Security of Information Infrastructures and Combating Computer-related Crime'
  - ### DNSSEC
    - SIDN and NLnetlabs studying technical aspects of protocol
    - Active role in IETF

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Ongoing activities (2)

● **National level**

➢ **NACOTEL: National Continuity Plan Telecommunication**

➢ **KWINT report**

- Commissioned in 2000

- Studies Internet vulnerabilities and weaknesses

➢ **Upgrade of National Noodnet**

- Ahead of neighboring countries

Conclusion

- **Small country, but important communications node**
- **Flexible laws offer remedies for evolution in technology**
- **Active at international level:**
  - **ICANN, CoE, EU, CENTR, …**
- **Pro-active government action**