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Telecommunications Fraud
Organized approaches to fight it

Presentation for
FIRST Technical Colloquium
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Agenda

- **Telecommunications approach to security**
- **Fraud types and examples on fraud**
- **Amount and trends on fraud, worldwide**
- **Methods and tools to combat fraud**
- **International cooperation**
- **Presentation on CFCA (Communication Fraud Control Association)**
- **Tele Denmark activities on fraud prevention and detection**
- **Questions?**

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Telecommunications approach
to security

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Security Statements (1.)

- **Security is a competitive parameter in the liberalized telecommunication world.**

- **Security protects the customers against incorrect bills and misuse from third parties.**

- **Security protects the company against accidental or by conscious caused looses or misuse of the telecommunication network.**

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Security Statements (2.)

■ **Security protects the employees against unjustified accuse on participation in criminal activities.**

■ **Security is a part of the company image and a trade mark on all telecommunication products.**

■ **Security is a demand from the community.**

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What are we to protect us against ? (1.)

■ **Customer complains on product quality.**

■ **Impenetrable or incorrect billing.**

■ **Unauthorized physical access to the customers telephone line. (clip-on fraud)**

■ **Unauthorized logical access to the customers telecommunication network and services.**

■ **Unauthorized physical access to exchanges, infrastructure and buildings.**
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What are we to protect us against ? (2.)

- Unauthorized logical access to network , exchanges and control systems.

- Unauthorized access to the administrative EDP systems and databases.

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Who are we to protect us against ? (1.)

- Criminals who wants to make phone calls free of charge.
- Organized criminals who bases there business on resell of stolen telecommunication products.
- Criminals who wants to disturb or destroy the telecommunication infrastructure.

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Who are we to protect us against ? (2.)

■ International operating criminals who wants to cover there activities by looping into the global telecommunication network.

■ Persons with legal access to network ,EDP systems or buildings but

    -consciously or unconsciously becomes a victim to criminal elements.

    -permit some act of revenge against the company

    -have been mentally ill or unbalanced.

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Fraud types
and examples on fraud

Physical access, (Clip on)

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The access network

Home

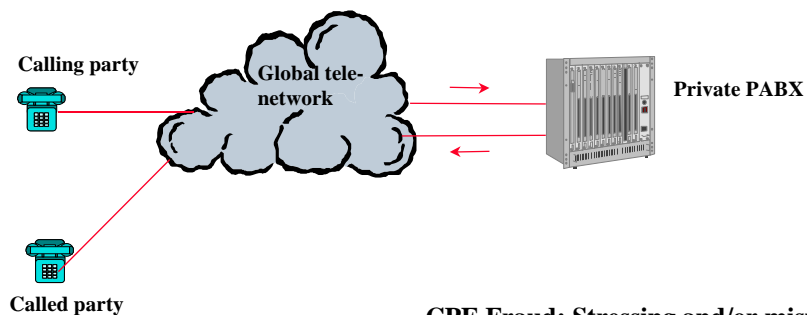Exchange
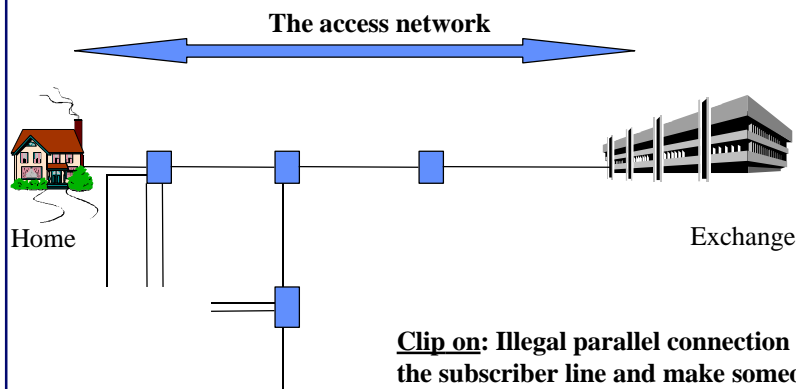
Clip on: Illegal parallel connection on the subscriber line and make someone else pay for the calls

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Customers Private Equipment Fraud

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Calling party

Global tele-network

Private PABX

Called party

CPE Fraud: Stressing and/or misuse of a customers PABX to get new dialing tone and make free calls

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Classic Fraud types

- **Subscription Fraud: Misuse of the operators credit on payment of the bill**
- **Mobile Fraud: Cloning of analog mobile phones**
  -Theft of SIM cards and handsets
  -Roaming Fraud, (misuse of the lack in timing for exchange of billing information)
- **Carding Fraud: Misuse of stolen, hacked or shoulder-surfed card numbers and private PINS**
- **Boxing Fraud: Illegal stressing of national or international channel associated signaling systems**

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Fraud types

- **Payphone Fraud: Physical or logical manipulation on payphones to get free calls**

Example: Eternity cards

Telephone card modified with eternity chip.

The chip is covered with tape

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Fraud types

- **Social engineering:Structured misuse of naive peoples to get confidential information or to sell fictive items (winnings, pyramid games etc.)**
- **Premium rate service Fraud: Misuse of others phones to generate calls to 900 services or specific countries to obtain profit from the service provider**

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Amount and trends on Fraud worldwide

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Estimated Fraud losses

- **Annual Fraud losses U.S. 1997 - 1998**
  Mobile Fraud $ 650 Million
  All telecommunications $ 9 Billion

  (**United States Secret Service**)

  Annual Fraud losses Europe 1998
  Euro 1 Billion

  (**FIINA conference**)

  Personal estimate Europe: Euro 2-3 Billion
- **Worldwide all telecommunications 1999**
  $ 20 Billion

  (**Nordtel, CFCA and others**)

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Trends on Fraud

- **Fraud is increasing**
- **Internet provides numerous recipes on how**
- **Fraud is becoming more and more sophisticated**
- **Fraud does not respect boarders and involves often more operators network**
- **The increase in integrated services "invites" criminals to look for "security holes"**
- **Interconnect points for different networks are obvious points for attacks**

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Methods and tools to combat Fraud

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How do we combat Fraud?

- Security policy for all units within the company
- Continuously education of security staff
- Awareness campaign for all employees
- Security inspection on new products
- Registration of all abnormal incidents
- "Listen" to customers complains
- Cooperation with the authorities (police etc.)
- Cooperation with other operators
- Supervision of the network
- Fraud Management Systems

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Tools (Fraud Management Systems)

- Real time supervision based on "Common channel signaling system no 7." (all calls)
- Creation of traffic patterns
- Setting up thresholds for alerts
- Automatic alert on suspected traffic, behavior or other abnormal changes
- Integration of information from different systems, (customer database, billing database, traffic database)
- Manual investigation on alerts

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International cooperation

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International associations handling telecommunications Fraud

- **ETNO: European Telecommunications Network Operators (Standardization)**
- **FIINA: Forum for International Irregular Network Access (Operational, incidents, methods)**
- **CFCA: Communications Fraud Control Association (Educational exchange of experiences, Fraud alerts)**
- **Nordtel, NS/T: Nordic security group, (exchange of experiences and incidents)**

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Presentation on CFCA
(Communications Fraud Control
Association)

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CFCA - Goal

- **Founded in 1985, CFCA is a not-for-profit international educational association working to help combat telecommunications fraud. CFCA seeks to promote a close association among telecom security personnel, to enhance their professional status and efficiency, and to serve as a clearinghouse of information pertaining to the fraudulent use of telecommunications services.**

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Membership

- **Interexchange Carriers (IXC), Local Exchange Carriers (LEC), CLECs and ILECS, Private Network Companies, Law Enforcement, Officers & Agents, CPE-PBX users, E-mail providers, Security Product Vendors, Corporations that use telecommunication services (i.e. banks, universities, department stores, etc.)**

- **Number of members app. 240**

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CFCA - Objectives

- **Educational conferences**
- **Education CCSP (Certified Communications Security Professional)**
- **Weekly Fraud Alert**
- **Expert forum (Questions from members)**
- **Communicator (Quarterly journal on Fraud issues)**
- **Fraud handbook**
- **Awareness brochures on Fraud**
- **Membership directory**

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CFCA - planned program 2000

- **2000 International Spring Conference
  "Fraud in the 21st Century"
  2 - 5 May Edinburgh Scotland**

- **Fifteenth Annual Meeting and Conference
  and Seventh Annual Exhibition
  20 - 23 June Washington DC USA**

- **2000 Fall Conference
  4 - 6 October Phoenix Arizona USA**
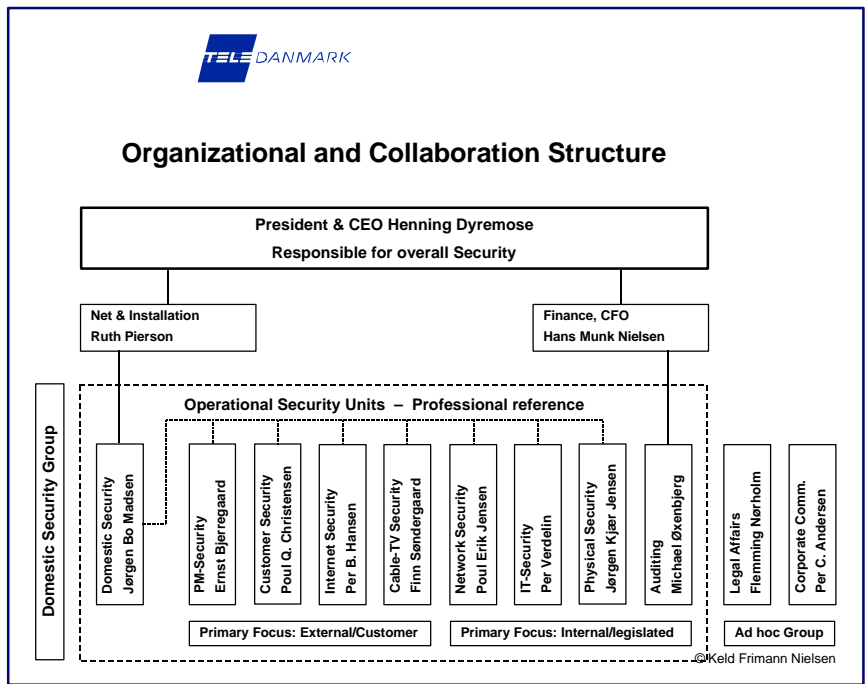
  WWW.CFCA.org   FRAUD@CFCA.org

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**Tele Denmark activities on Fraud
prevention and detection**

Organizational and Collaboration Structure

President & CEO Henning Dyremose
Responsible for overall Security

Net & Installation	Finance, CFO
Ruth Pierson	Hans Munk Nielsen

Domestic Security Group

Operational Security Units – Professional reference

- Domestic Security — Jørgen Bo Madsen
- PM-Security — Ernst Bjerregaard
- Customer Security — Poul Q. Christensen
- Internet Security — Per B. Hansen
- Cable-TV Security — Finn Søndergaard
- Network Security — Poul Erik Jensen
- IT-Security — Per Verdelin
- Physical Security — Jørgen Kjær Jensen
- Auditing — Michael Øxenbjerg
- Legal Affairs — Flemming Nørholm
- Corporate Comm. — Per C. Andersen

Primary Focus: External/Customer	Primary Focus: Internal/legislated	Ad hoc Group

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Approaches

- **Corporate security policy**
- **Dedicated security policies for all units**
- **Security inspection program for new functions**
- **Security program for the access network**
- **Security program for access to buildings**
- **Security program for the IT network**
- **Supervision program for traffic etc.**
- **Investigation on suspicion**
- **Cooperation nationally and internationally**
- **Cooperation with the police**
- **Plan to implement a Fraud Management System this year**

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Questions?

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