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Siemens IP-communications

Voice over IP- Revolution in Business Communication?
Otaniemi 27.10.1999
Pekka Eloholma

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Convergence of information- and communicationtechnology

Convergence by end-user products

PC
Telep-hon
TV

Convergence by Networks

Telephony-networks
Internet
Cabel-networks
Mobile networks

Convergence by solutions

Business-processes
I&C-Applications
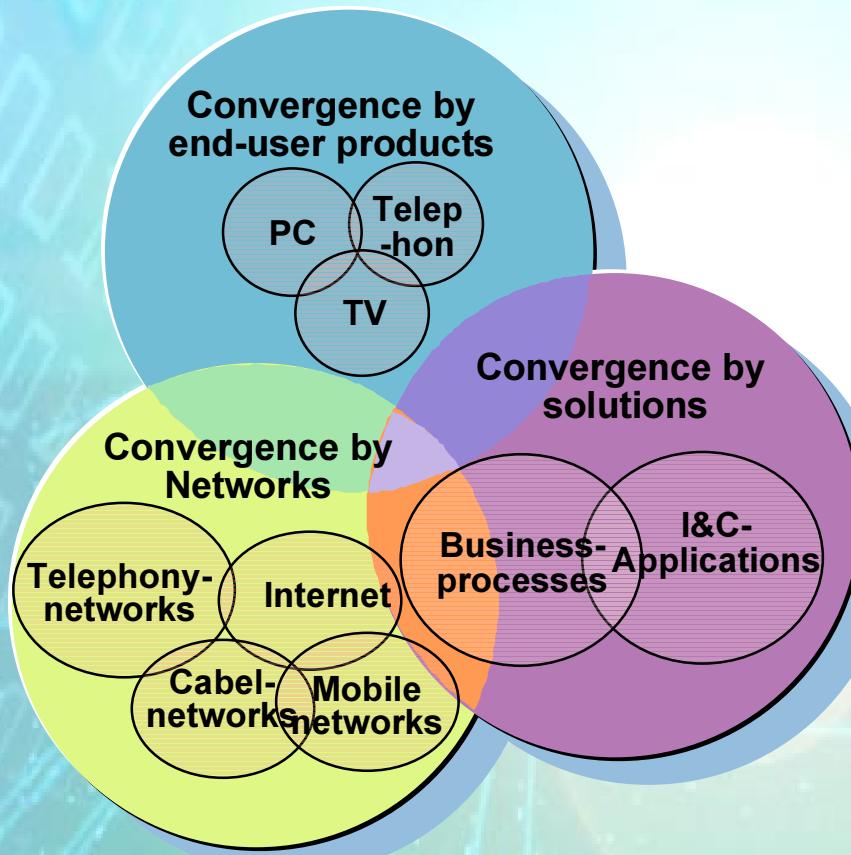
Convergence by end-user products/server
- E-Mail over GSM
- Telephony with PC
- Internet TV
- Personal Digital Assistant
- PBX on Server

Convergence by Networks
- Telephony over Internet
- Data over cellurar networks
- Multimedia over converged networks
- IP-Bases infrastrukture
- Internet over cellurar networks

Convergence by applications/services
- Need for I&C processconsulting / outsourcing
- Processoriented I&C customersolutions for example customer care center
- Multimediabased solutions

Information and Communication Networks

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# Examples of *customer demands*
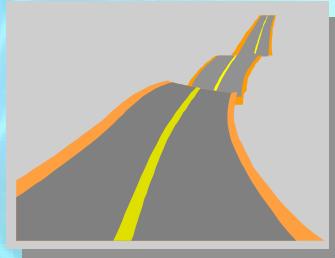
New multimedia services and applications
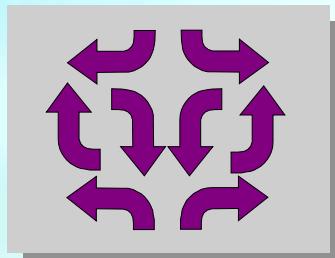
Products must get more user friendly

Quality of service
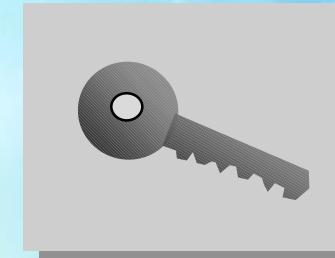
Reliability of IT-infrastructure and services
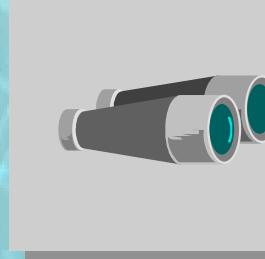
Only one infrastructure: one connection/ one end-user device
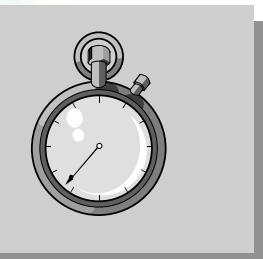
Productivity: Integration of services in business applications
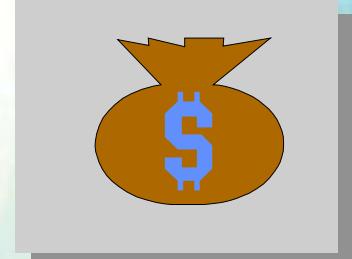
Cost savings (Total Cost of Ownership)
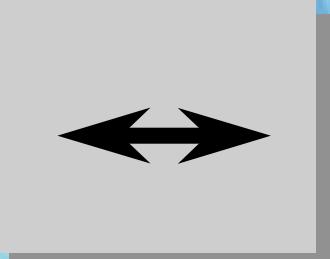
Only standard-based products

Information and Communication Networks

3
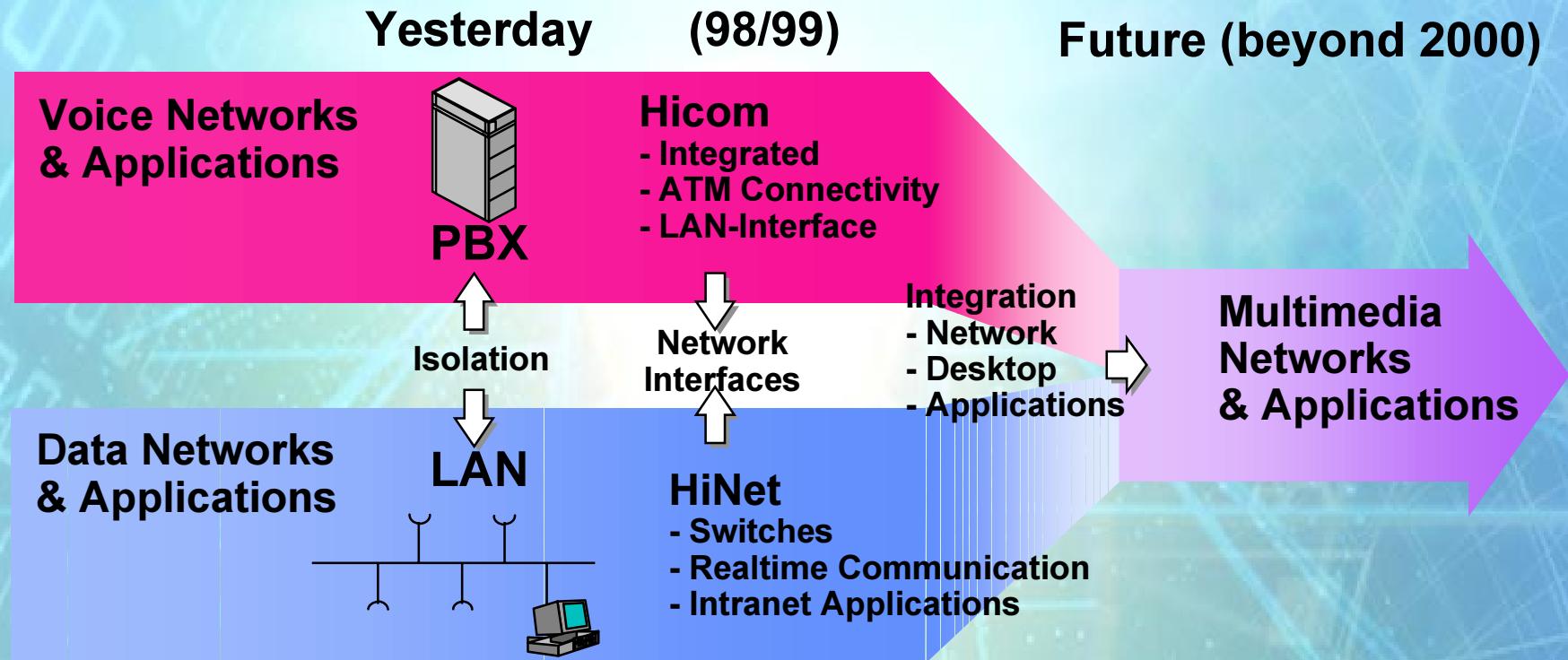
Traditional Voice Comm vs. IT-technology

Telephone:
- voiceoriented
- circuit switched networks -
- worlds largest network
>500 milj. users
- standard but
propriatery systems,
- progr. languages CHILL/SDL
- very high usage and
short response times

Standard IT Technology:
- dataoriented
- packet switching networks
 >25 milj. users
- standard, common &
open systems (UNIX, NT)
- latest technology - newest
 microprosessors etc.
- lot of middleware: databases,
transaction systems, programming-
ympäristöjä- and applications

PABX vs. VoIP

Line Cards

Interfaces

Switching

CPU & SW

Gateway

Win NT Server & ToL SW

PC/ Laptop & ToL SW

Router

LAN
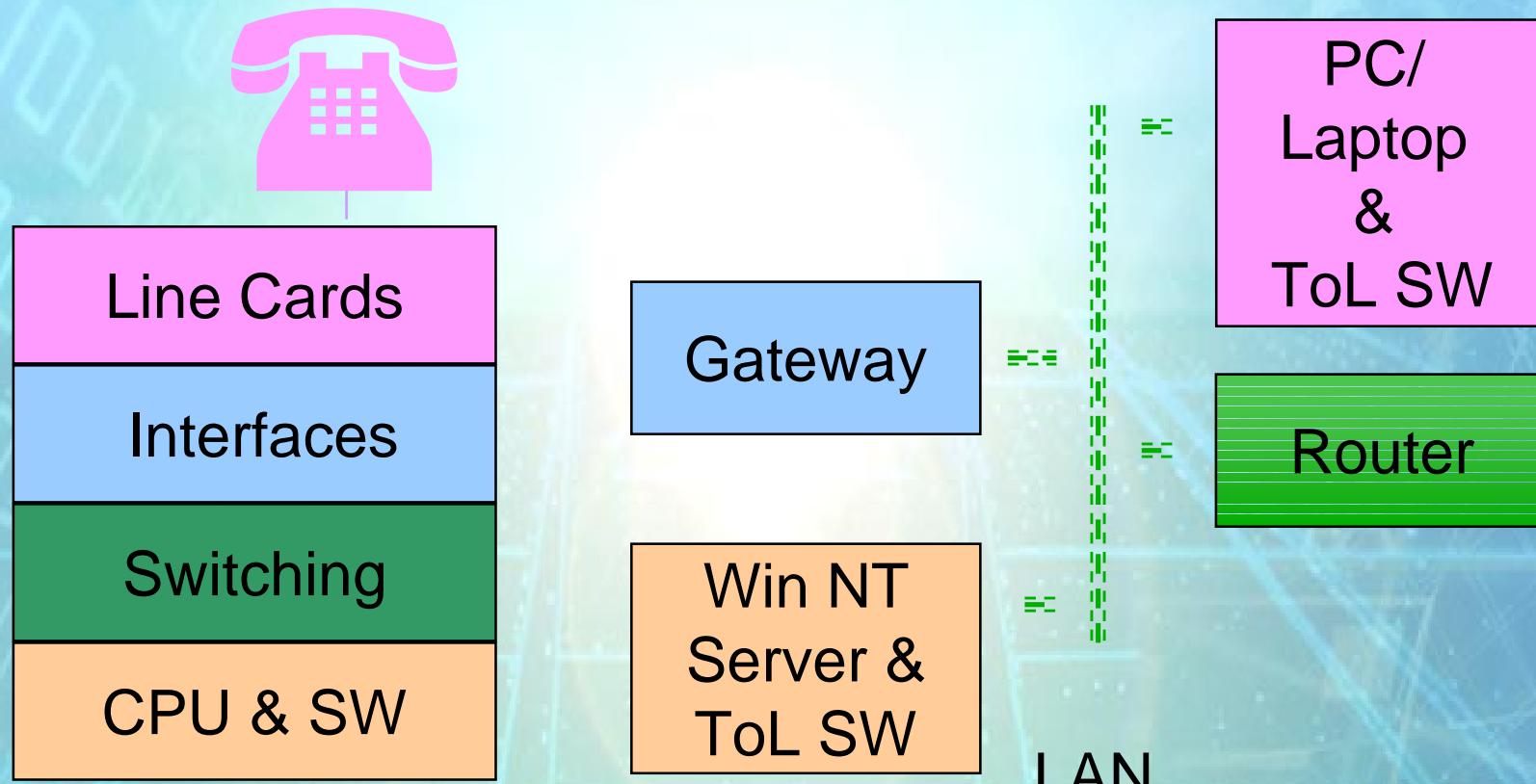
Trend: *IP* dominates Layer 3

IP dominates the world of networkprotocols

Amount of Internet Service Providers

10.000.000
1.000.000
100.000
10.000
1.000
100
10

70 74 78 82 86 90 94 98

LAN Protocols

80%
70%
60%
50%
40%
30%
20%
10%
0%

SNA

IPX

IP

Others

94 96 98 00 02
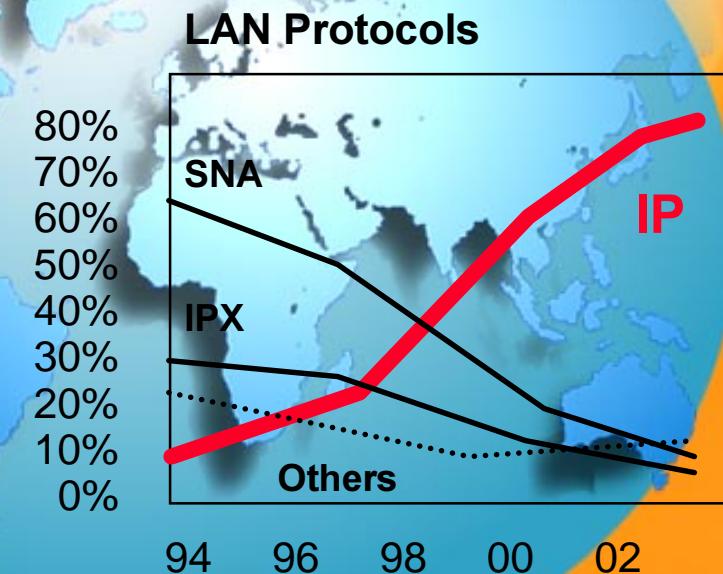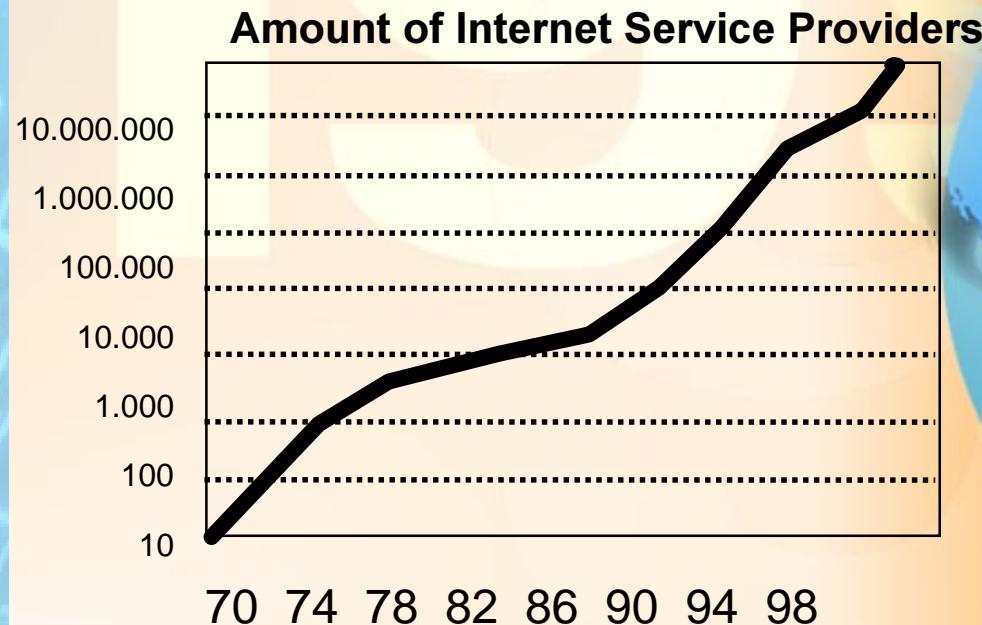
Source: Gartner Group, 03/97

Traditional PBX vs. IP-PBX

	PBX	IP-PBX
Night-switching	Yes	No
Manager-Secretery features	Yes	No
Attendant features	Yes	No
Calls via inranet	No	Yes

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Traditional PBX vs. IP-PBX

	PBX	IP-PBX
Standard and open	no	yes
easy to expand	no	yes
mgemt&maintenance	complex?	GUI
Remote / ISDN 64kb	no	yes
simple CTI	no?	yes

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Convergence in PABX

Headquarters

CTI, TAPI

Branch office

Hicom Integrated

LAN

**Communication Server
Hicom 150 E**

Ethernet LAN

Hicom
Xpress @LAN

Server

Applications

ISDN

PSTN

Etätyö

WWW
Internet

H.323 Standard-Client

Information and Communication Networks

Siemens VoIP-Team Nordic

Siemens Perkkaa

PBX

HiNet RC 3000 PC Client

HiNet RC 3000 Gateway

IP / Ethernet

HiNet LP 5100

HiNet RC 3000 Server

IP Intranet

PSTN

HiNet RC 300 Remote Client

Stockholm

HiNet RC 3000 Client

Copenhagen

HiNet RC 3000 Client

Oslo

HiNet RC 3000 Client

IP / Ethernet

HiNet LP 5100
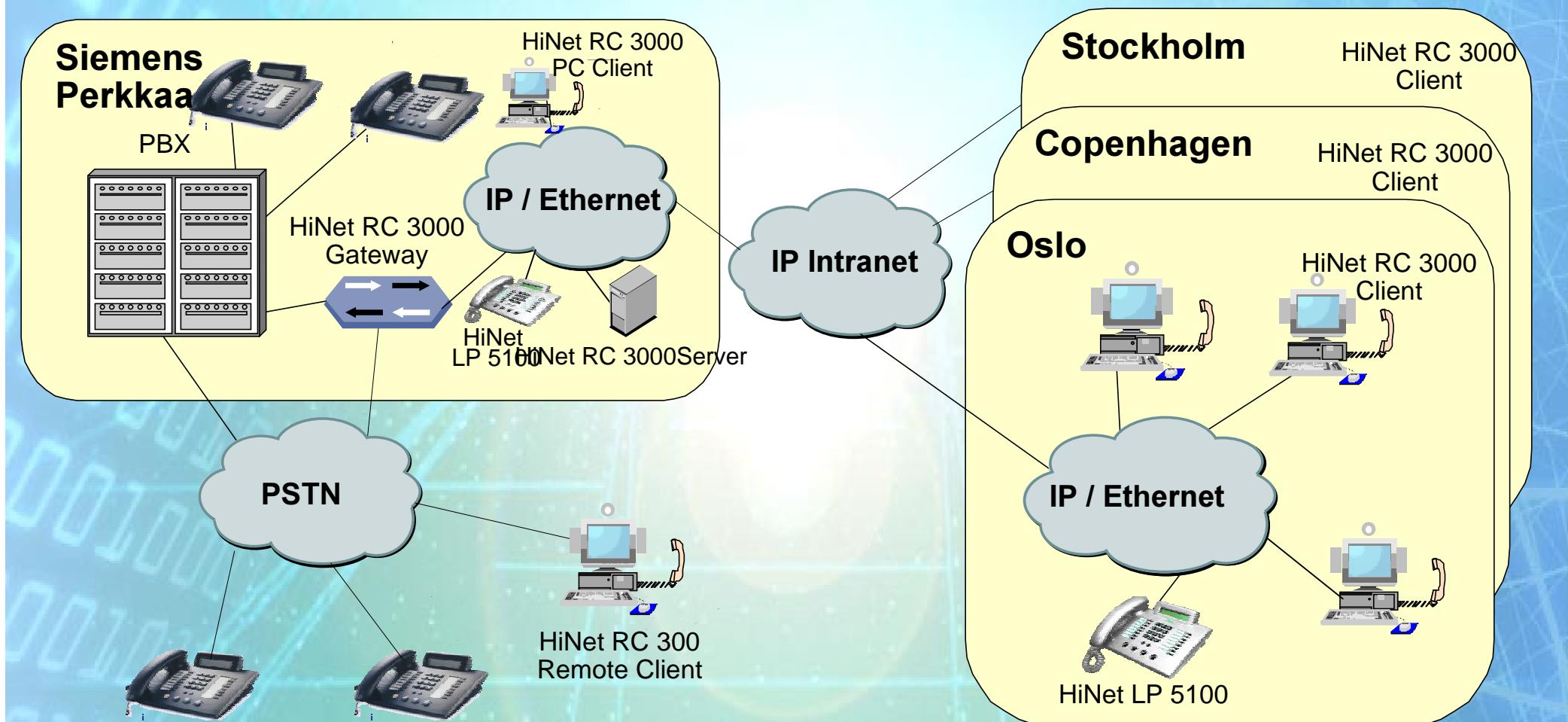
Telephony Internet Server (TIS)

Savings in Telephone charges

Networkwide Services

Hicom 300 E

Telephone

TIS

Hicom 300 E

TIS

Telephone

T1

Intranet

$n \times S_0$

Fax

Fax

Circuit Switch Network
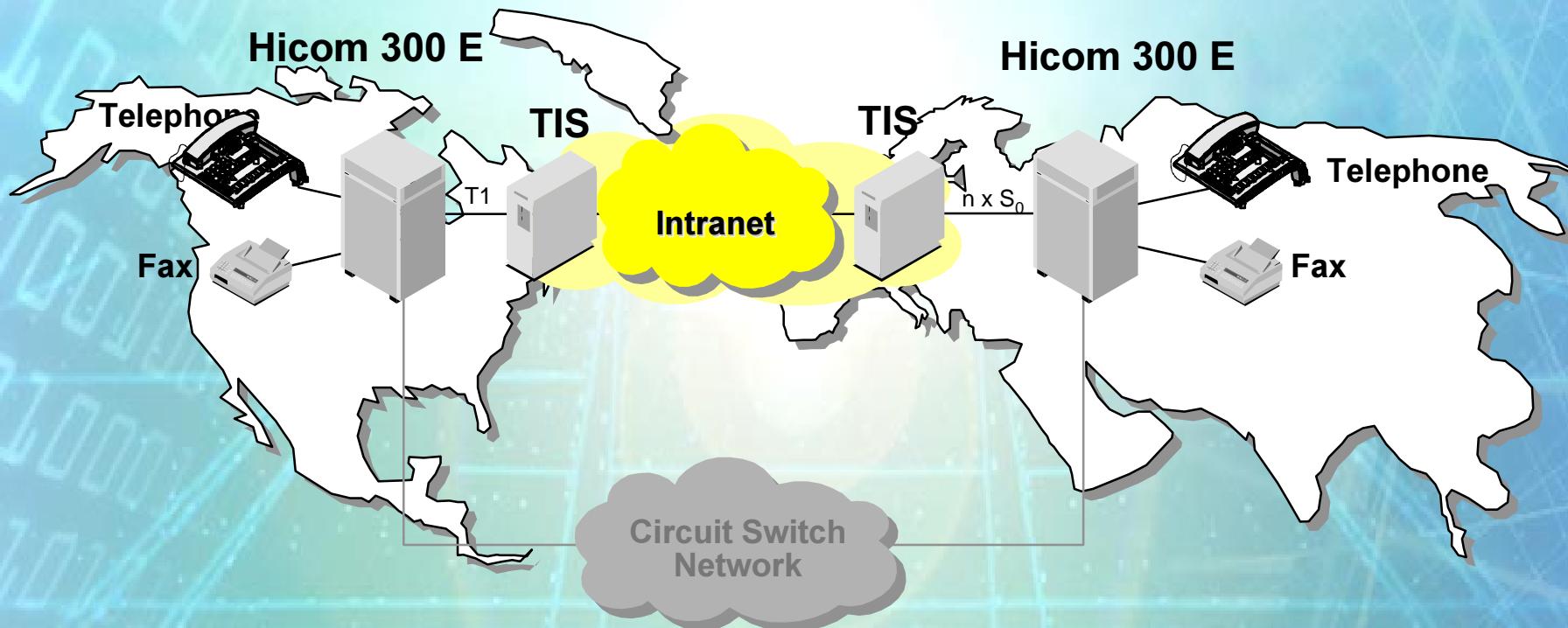
Applications: IP-Call Center

Hicom Xpress Server

- ✓ **Multimedia Call Processing**
- ✓ **Telephony**
- ✓ **Computer Telephony (CT)**
- ✓ **Directory Service**
- ✓ **Messaging**
- ✓ **Supervisor**
- ✓ **Automatic Dialling**
- ✓ **Voice Recording**
- ✓ **CorNet NQ Interworking**
- ✓ **Multimedia Least Cost Routing**
- ✓ **...**

PSTN

S_0 / S_2

**Gateway/
Gatekeeper**

WEB-Server

Internet

Firewall

**Customer
IT**

**Mail
Server**

**LAN
Switched Ethernet
10/100 Mbit/s**

**LAN
Switch**

Corporate LAN

**Agent 1
H.323**

**Agent 2
H.323**

**IP-Phone
H.323**

PC

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Unified messaging

Fax

PBX

Internet/
Email

Voicemail

IT

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Terminals

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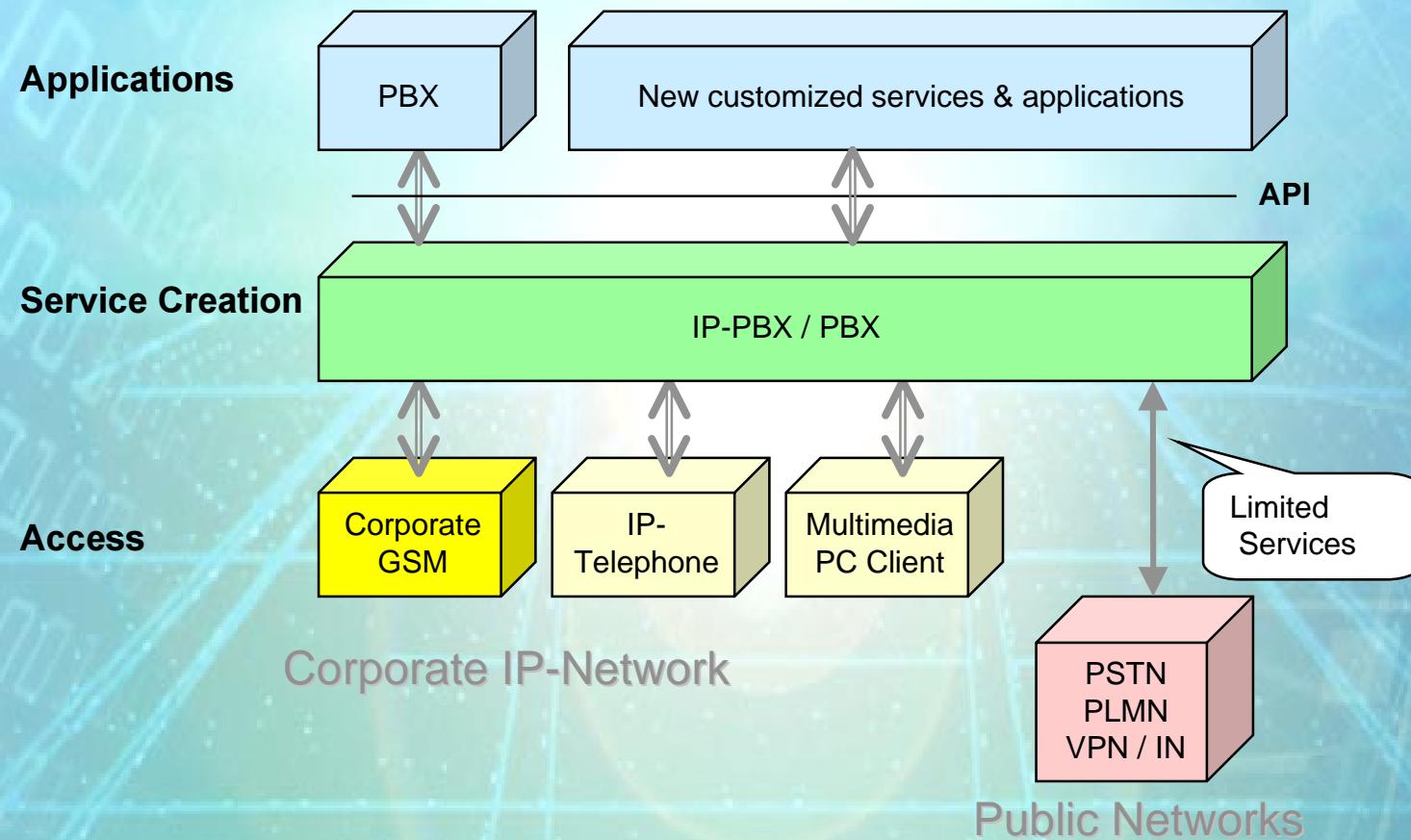
Corporate GSM Unified Messaging - Intelligent Call Forwarding

Mailbox - Papproth Eckhard - Microsoft Outlook

Datei Bearbeiten Ansicht Wechseln zu Extras Verfassen TrustedMIME ?

Nachrichten

Communication Center -Tom Miller

Outlook

Inbox (3)

Kalender

Kontakte

Aufgaben

Journal

Notizen

Deleted Items (25)

Mail

Weitere

0 Elemente

Archive
Archive
Mailbox - Papproth Eckhard

Von Betreff Erhalten

Dieser Ordner enthält keine Elemente, aber er enthält
untergeordnete Ordner. Um zu den untergeordneten Ordnern zu
des aktuellen Ordners in der
sie die Ordnerliste ein.

Regel-Assistent ? X

Regeln in dieser Reihenfolge anwenden:

Agenda marked meeting
No Answer
Not Reachable
Agenda marked vacation
IF PC idle, route to
Corporate GSM

Neu...
Kopieren
Ändern...
Umbenennen...
Löschen

Nach oben Nach unten

Regelbeschreibung:
Den unterstrichenen Text zur Bearbeitung des Wertes anklicken.

Nach Erhalt einer Nachricht,
die an VoIP (ICN) Mailinglist gesendet wurde
diese in den Ordner Zielordner verschieben

OK Abbrechen Optionen...

- **Intelligent Call Forwarding:**

- **Personal Identity**

- **Calendar status**

- **Reachability-status**
  (Corp. GSM, PC, public GSM)

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How are the networks of our customers *changing*

- IP will be the dominant Protocol

- Dedicated switching (10/100) will take over shared LAN's

- ATM and Gigabit ethernet will be LAN Backbone Technologies

- Layer 3 switching is takin over the role of routers

- Networks are going to have one more feature: real-time capability

- Data-voice-video will be integrated in end-user devices and business applications

- Mobility is making new requirements for networks

- Networkmanagement will be a integrationsfactor

Business Communications - *more* than just products
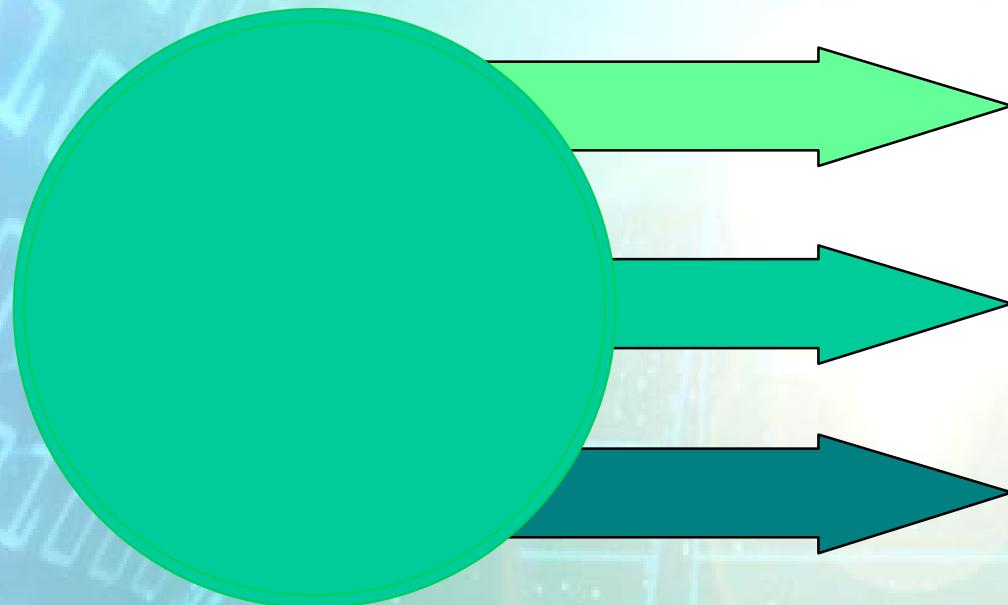
- The Services

- The Architecture

- The Products

Convergence-strategy has *special benefits* for every organisation

- **Future proof through international standards and open infrastructure (API's...)**

- **Investment protection through integrating the existing world**

- **Better customer relationship und customer satisfaction through multimedia support for business processes**

- **Improvement of productivity throught integration of communication in work processes**

- **Cost savings through one infrastructure**

- **Reduction of the transfer costs through better utilization of the capacity in the IP-Networks**

- **use on future oriented CTI-applications**

Market trend in network solutions

DATA

VOICE

Network-analyse

Technology-consultation

Network-management

Services

Outsourcing

Applica-tions

Intranet/Internet

Network-Infrastructure

Multimedia Communication

LAN Hardware

AN End-user devices

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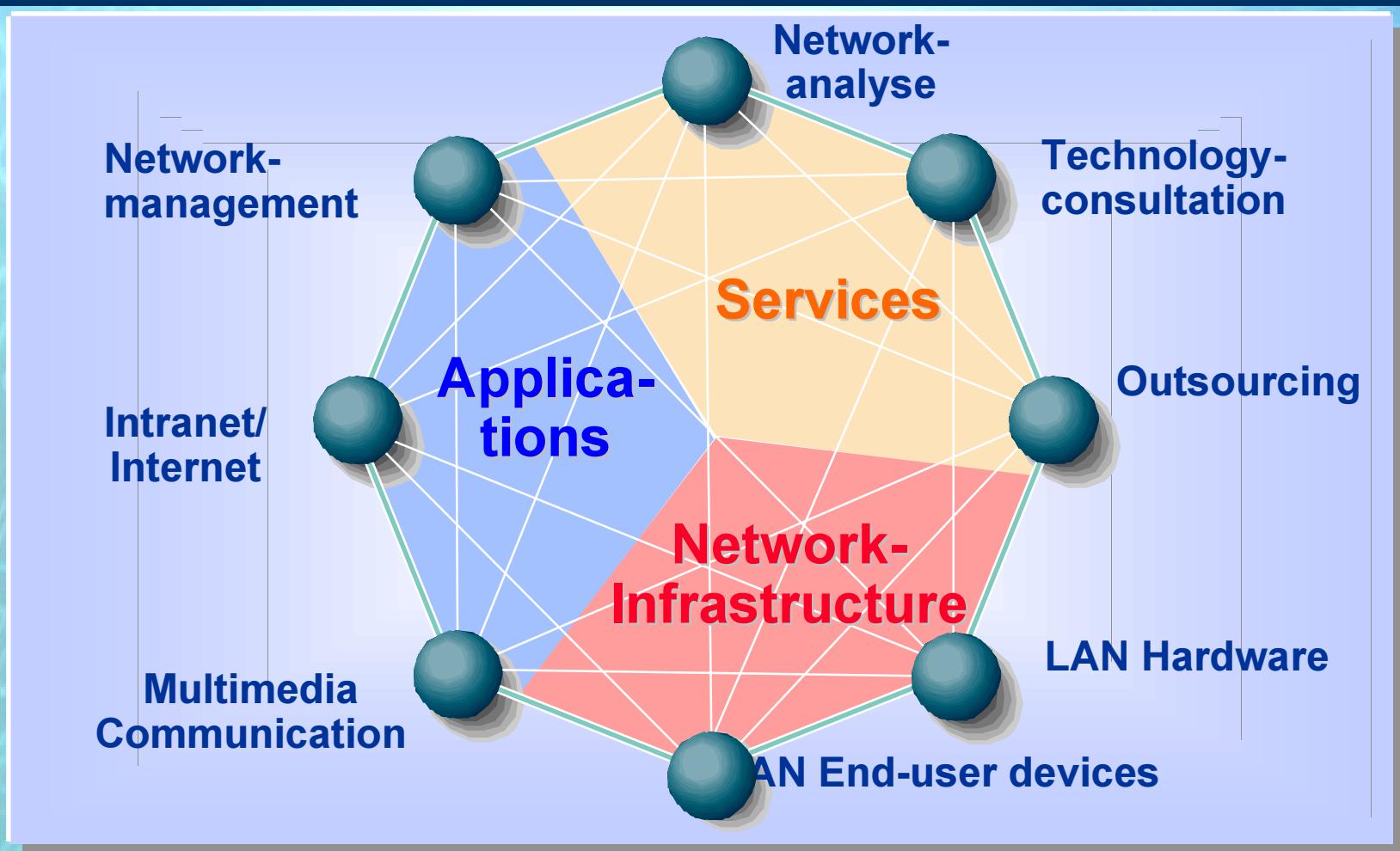
Solution competence: the key to success

Network analyse

Consulting for intranet applications

Powerfull infrastructure

High level switching architecture

LAN based Multimedia services

Process integrated features

Networkmanagement

Post-sales service

Information and Communication Networks

Voice over IP - three different views

"Router Vendors":
Voice over IP is ready
There is no problem, which we could not solve

"PABX Vendors":
PAPX-systems can be connected to Voice over IP Networks
and they offer the most important services

"Customers":
Voice over IP sounds good,
but is the technology ready to be implemented in our company?
Source: PBX2000-Conference on enterprise voice communication