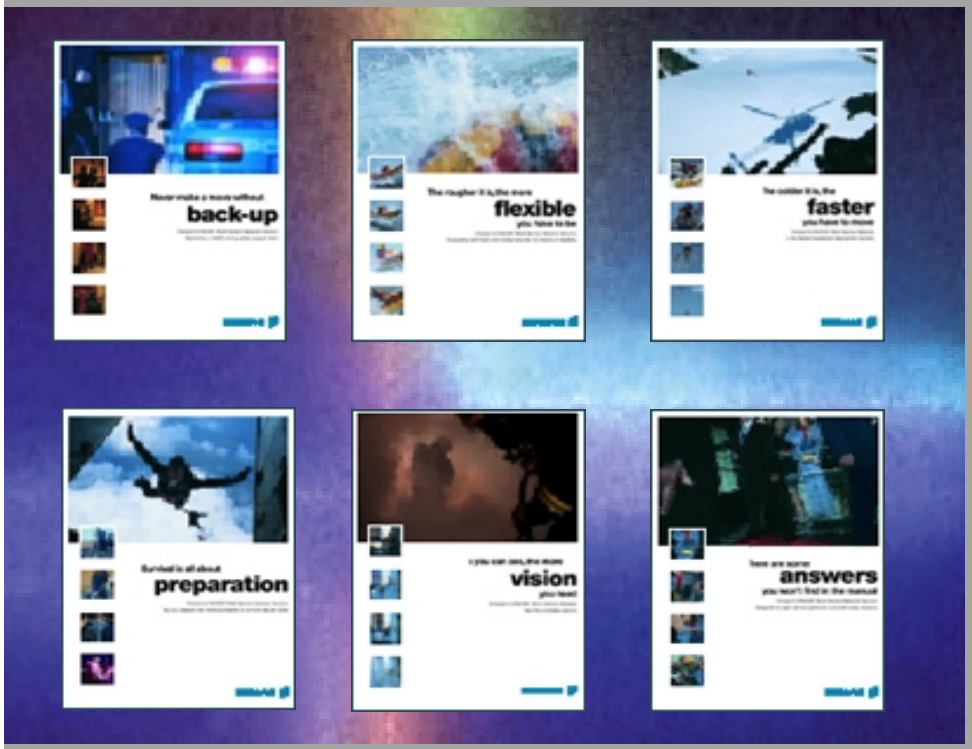

ERICSSON
IPv6
mobile
CDPD
WDM
cdmaOn
IMS
WAP
capacit
TCP/IP
CDMA2000
Mobile Internet
e-mail
3G
multimedia
data
mobile@home
CDMA
SMS
browsing
Bluetoo
Mobitex
ISDN
IP
FTTX
LMDS
streaming
speed
fixed Broadband

Business Opportunities with IPv6

Shaping a seamless future



Mitch A. Lewis
General Manager and Director
Ericsson Multi-Service Networks

Madrid 2002 Global IPv6 Summit
14 March 2002

Opportunities & Challenges in the Market

- Capacity needs for traffic from mobile, dial-up internet and interconnect continue
- Legacy networks must migrate to voice over packet for OPEX savings - transit and local
- “Safe” choices to be made in terms of technology (e.g. ATM→ IP) & build for future
- Flight to quality (service, reliability etc.)
- The strong and those that innovate survive (incumbents & well capitalised new operators)
- Desire to work & partner with successful suppliers and partners for systems integration

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Leading to further restructuring of the industry

- The larger telcos will dominate growth
- Restructuring for profitability
- Separation of Network infrastructure and Service Provisioning
- Migration to installed customer base important
- Networks must evolve to handle future multimedia
- Open standards and non-proprietary interfaces
- Developing & implementing simple services people will pay for

IPv6 is critical element to handle future converged services

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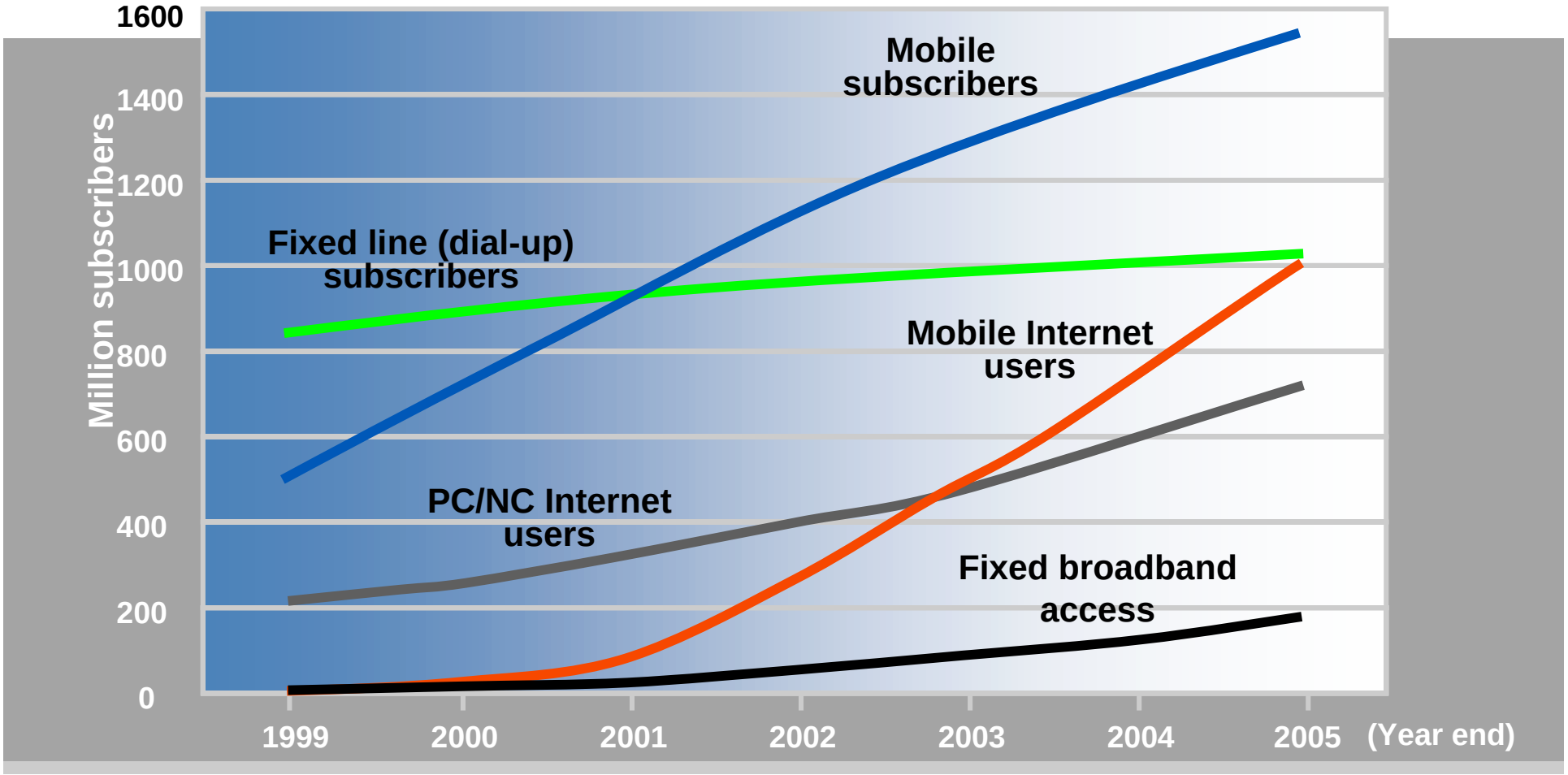
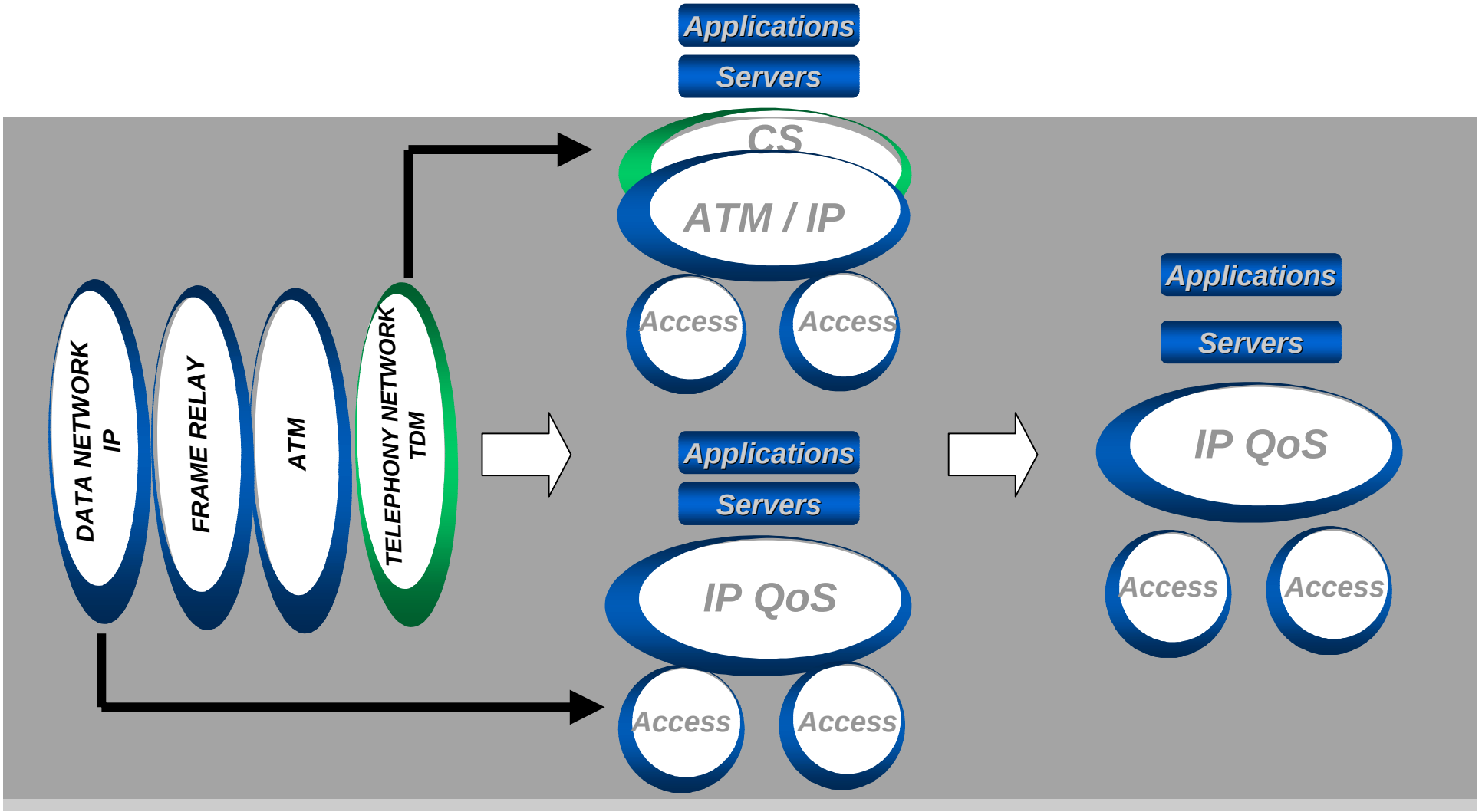
Worldwide subscribers and users



Multi-service Migration



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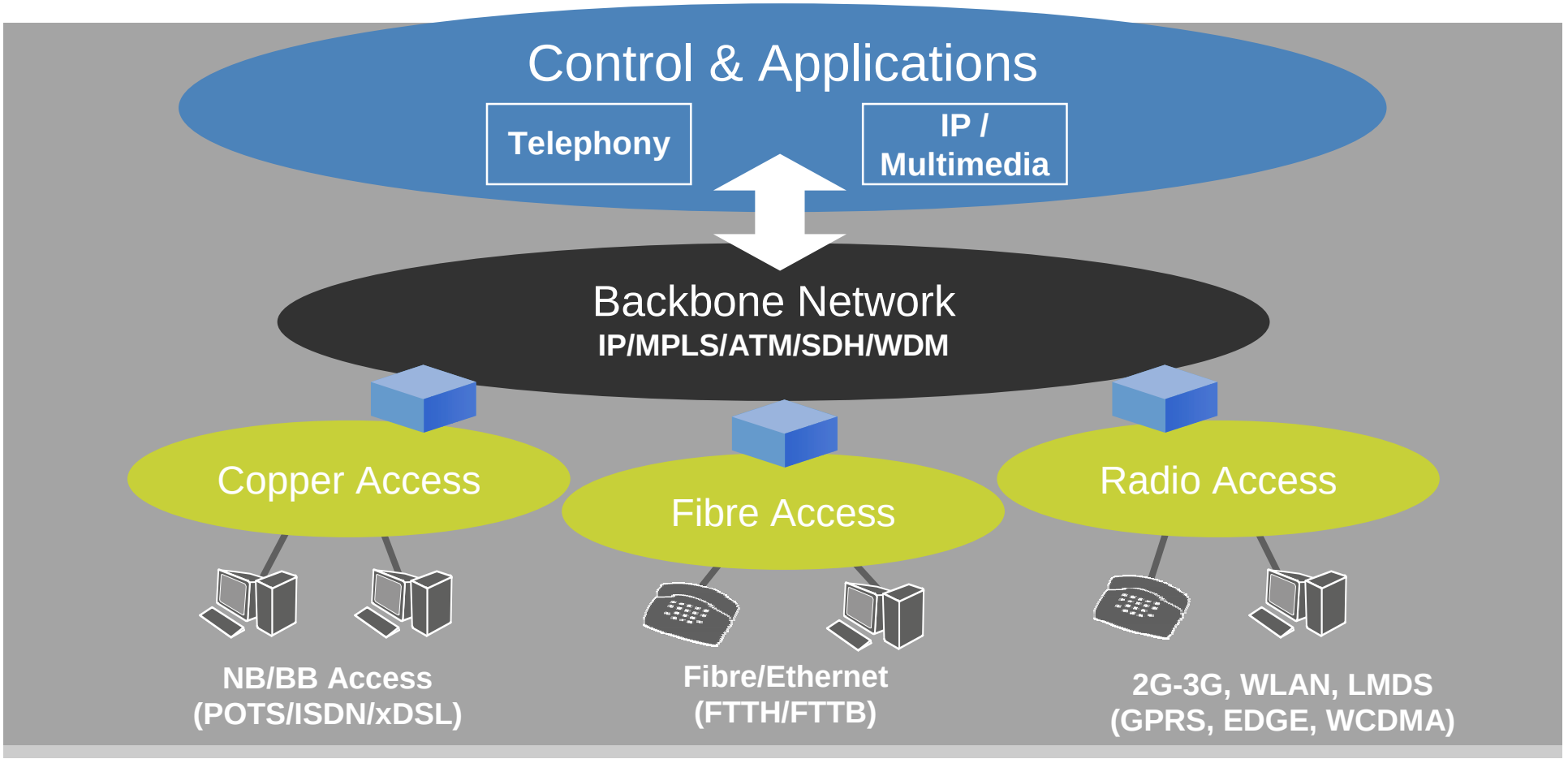
Next Generation Multi-Service Networks



Three main drivers of Convergent Networks and requirements for IPv6

Drivers ...

- Common networks for fixed *and* mobile built on ATM/MPLS and IP
- Mobile Internet *and* Broadband Internet applications
- Convergent technologies *and* appliances including Bluetooth / WLAN

… Need

- To shape the Broadband & Mobile Multi-Service network market and:
  - Provide end-user required quality of service, carrier-class networks
  - Provide network *security & QoS* along with always-on, always connected

Multi-service core and backbone solutions for fixed and mobile networks

Common backbone networks for different access methods
Wire-speed, carrier-grade and business-class

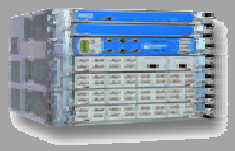
- **Ericsson *will* include IPv6 capabilities in all products**
- **IPv6 already in certain Ericsson Products (via Telebit e.g.)**
  - **The world´s first IPv6 router was shipped in 1995**
- **Partner Juniper Networks already supports IPv6 in products**

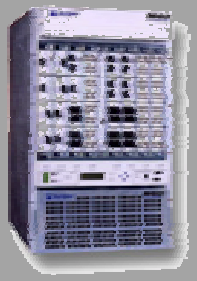

AXI 540-7

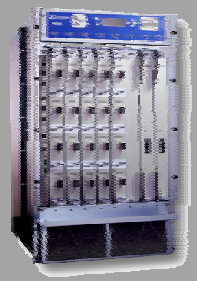

AXI 540


AXI 520-1


AXI 520-2


AXI 520-4


AXI 520


AXI 580

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IPv6 ...

Not an attack on IPv4

A salute to IPv4

IPv4 has existed since 1975
with only minor changes

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Drivers for a New Generation of IP

- **Address space is running out**
  - Theoretically 4 billion addresses available
  - 75% of address space is allocated today
  - Address aggregation with “private” IP addresses has prolonged the usage of IPv4
  - 100,000 routable prefixes = large routing tables

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Ericsson's position on IPv6

- Ericsson will include IPv6 capabilities in all products,
  - User interface
  - Terminals
  - Applications
  - Middleware
  - Servers
  - Gateways
  - Access networks
  - Core networks
  - Management systems

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Where will users want new services? ...

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… Home, away and while Mobile (!) … examples of Mobile and Broadband Internet applications

Young @ heart segments (“Time-To-Kill”)

- Entertainment (Games, Music, Sports,…)
- Socializing (Voice, SMS, e-mail, photos,…)
- Positioning
- Safety

Professional segments – Business/Private (“Time-To-Save”)

- e-mail/voice
- Personal services (calendars, reminders,…)
- Intranet access, tele-working
- Positioning
- Remote control of home
- m and e-commerce including banking
- Safety

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Convergent technologies and Bluetooth appliances including WLAN 802.11b

Drivers for a New Generation of IP

Next generation applications

- Mobility
- True conversational multi-media requires always-on
- New use of voice over packet, mobile phones, e-boxes, WAP-phones and many other applications, demands more IP addresses than IPv4 may support
- The support for multicast in IPv4 is not satisfying

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The importance of security in convergent IP-based Multi-Service Networks and role of IPv6

Security breaches

- IPSEC is not developed for IPv4
- IPv4 has SSL but it only works with TCP, not UDP
- To get security today we use firewalls
  e.g. hard to work from home

Goal	Attack
Confidentiality	Spy, eavesdrop, listen
Authenticity	Fake with sender ID
Integrity	Modify msg. in transit, replay packets
Availability	Silence peers, flood with msgs.

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Quality of Service (QoS) importance in IP-based Multi-Service Networks

Next Generation Applications

- Directly supported in packets
- Advanced queuing functions
- Compression of header as well as payload
- Service levels to be defined e.g. based on

	Voice	Video	File
Delay v.	small	small	large
Delay variation	v. small	v. small	large
Bandwidth	v. small	large	large
Bandwidth variation	small	large	large
BER large	small	v. small	

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Summary and what's important

- New services (people will pay for)
- Simplicity
- Mobility (anytime, anywhere)
- Migration (step-by-step network evolution)
- Open standards
- End-to-end solutions
- Security
- Quality of Service (QoS)

Multi-Service, Multi-Access Networks are dependent on IPv6


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streaming
speed
fixed Broadband