



HELSINKI
ARENA 2000

Helsinki

Arena 2000

- virtual meeting point

Helsinki Telephone Corporation
Timo Simula





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General trends

Voice calls go wireless

- In Europe GSM/DCS
- In Finland mobile penetration is now 60 %



Multimedia services use fixed lines

- Internet users over 30 %
mostly telephony/ISDN network

IP-protocol everywhere

- Terminals, networks, services
- **Importance of Content services**
- Critical mass is reached



Helsinki Arena 2000



<http://www.helsinkiarena2000.fi>



OBJECTIVES

- Creating Virtual Helsinki into the next generation multimedia network
- Meeting point for citizens of Helsinki
- Channel for cultural and business activities

SERVICES

- Telecommuting
- PC phone calls & videophones
- City Authority Services
- Electronic Commerce
- E-mail, FTP, Internet video chat
- 3D virtual reality navigation
- Arts and performances
- Yellow pages
- Info on demand, Net TV
- News on demand
- Network games
- Helsinki meeting point



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Project Consortium

- **Telecom operator**
 - Helsinki Telephone Corporation
- **Equipment manufacturers**
 - IBM, ICL
- **Software providers**
 - IBM, ICL, NOVO Group, TT Tieto
- **Network manufacturers**
 - Nokia, IBM, ICL
- **Content providers**
 - Helsinki City, Merita-Nordbanken (bank), Helsingin Sanomat (newspaper), Helsinki Media Company, universities



HOME PC CHANGES QUICKLY INTO A VIDEO TELEPHONE

Even **free software** starts to follow standards

- The cheapest PC-camera costs now \$100 and soon it is included
- Solutions for internet, corporate LAN:s and ISDN-network are now compatible





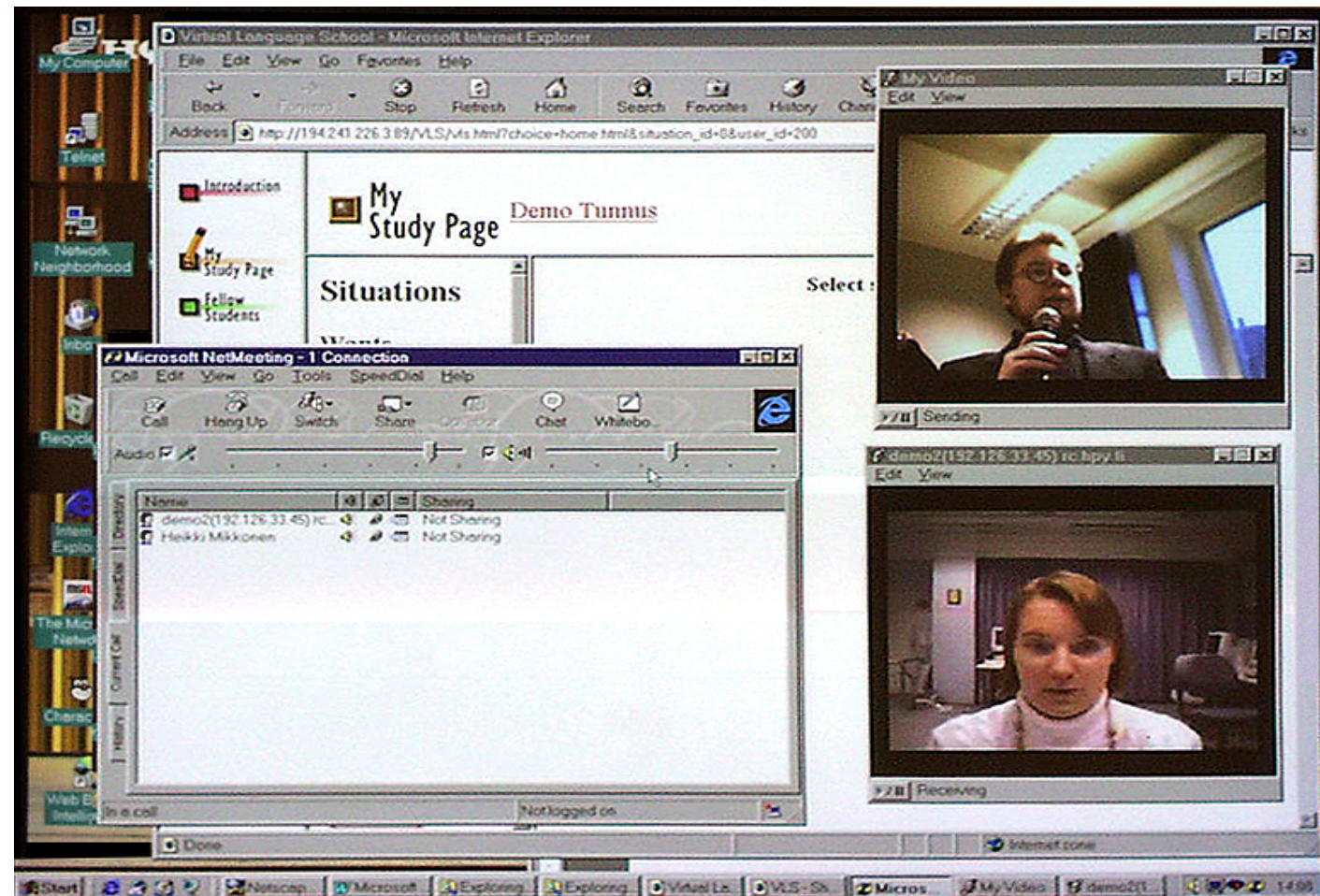
Tools for Communication

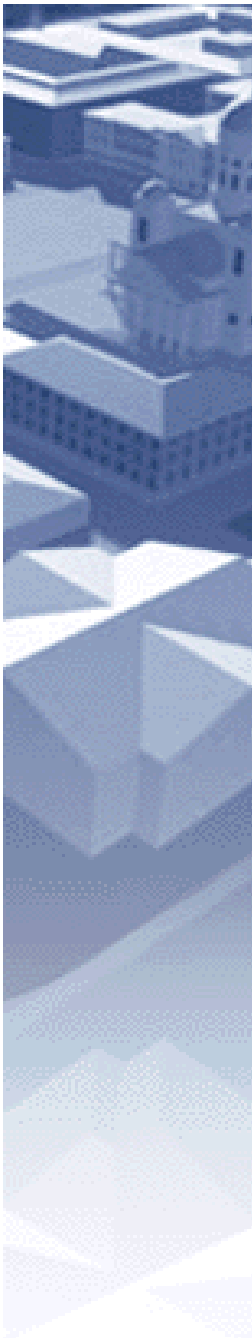
- Multimedia PC
 - camera
 - network
- Digi-TV
 - Set-Top-Box
- Mobile telephone
 - WAP/UMTS





Virtual Language School





CASE: City of Helsinki offering 0800-services through IP-PSTN-GW



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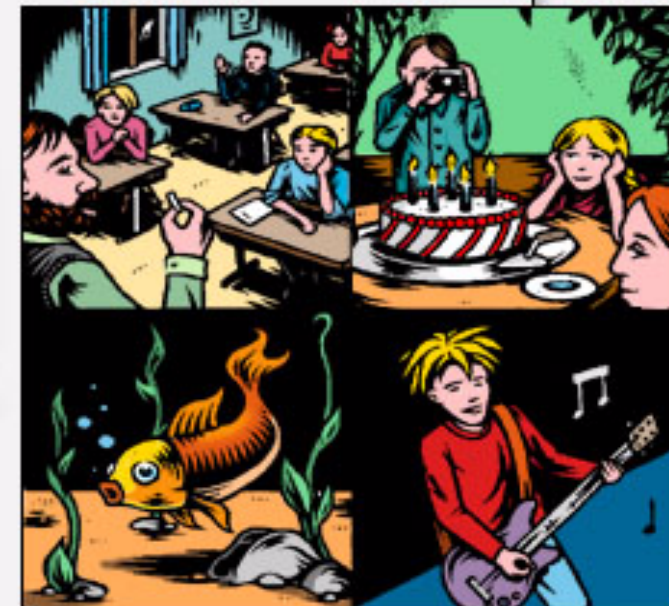




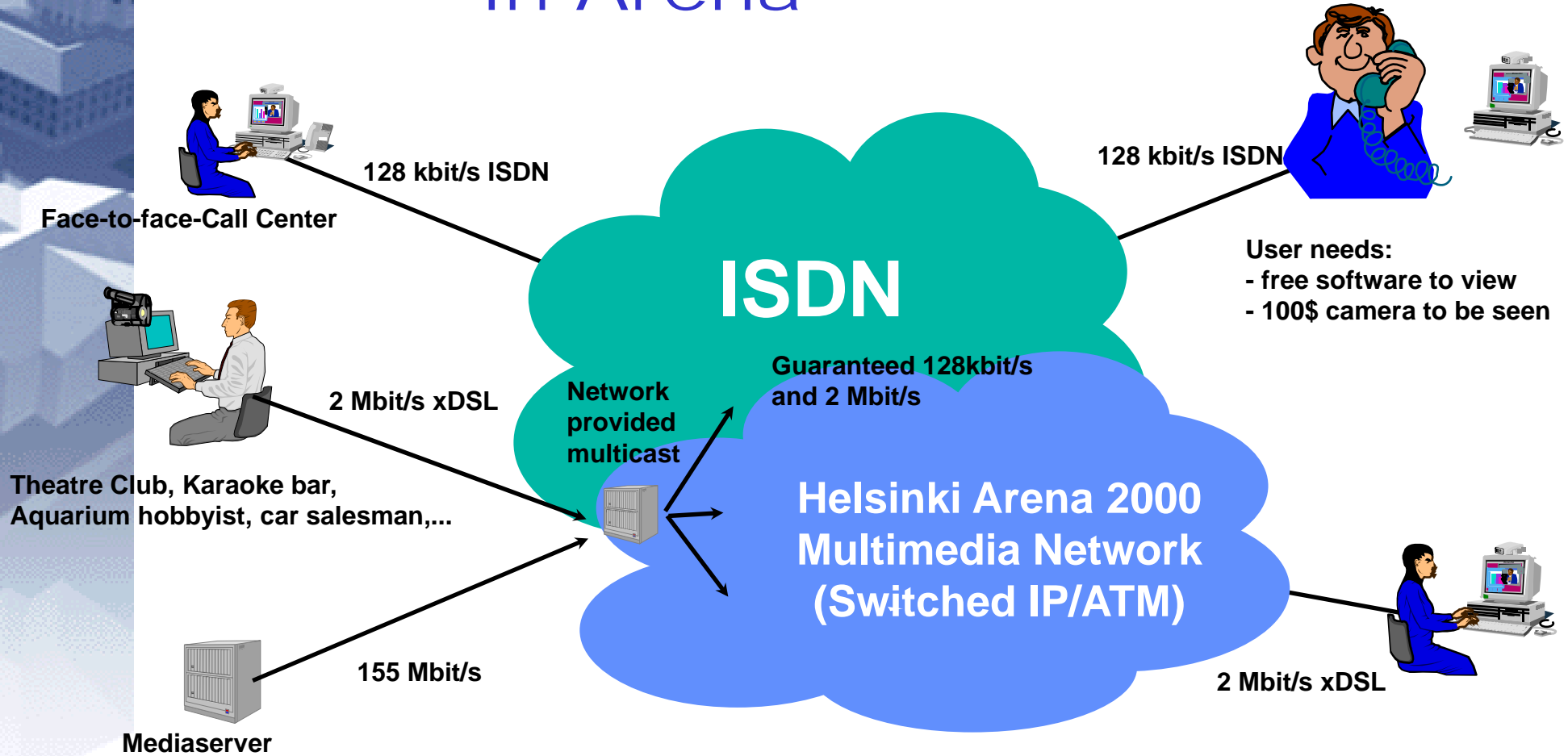
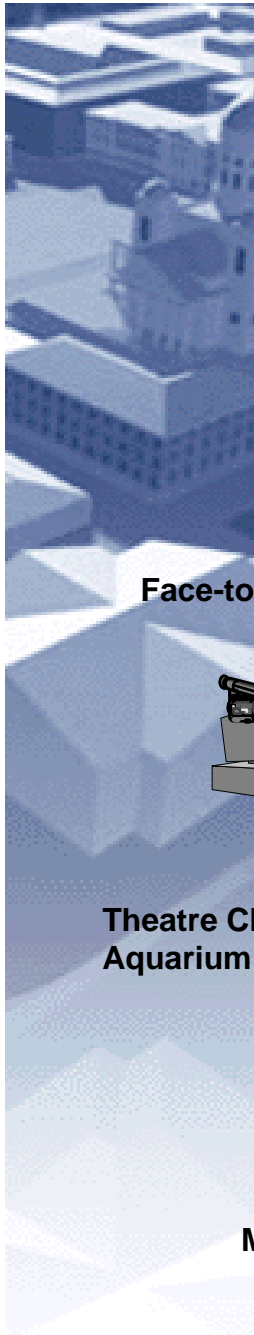
POWERFUL NETWORK ENABLES THE PC AS A TV -TRANSMITTER

Existing telephone network can now be upgraded to deliver **VHS-quality** TV-picture from homes and clubs to other homes

- Home PC acts as receiver
- PC can work as the transmitter but needs add on equipment
- The network must support efficient multicast capabilities



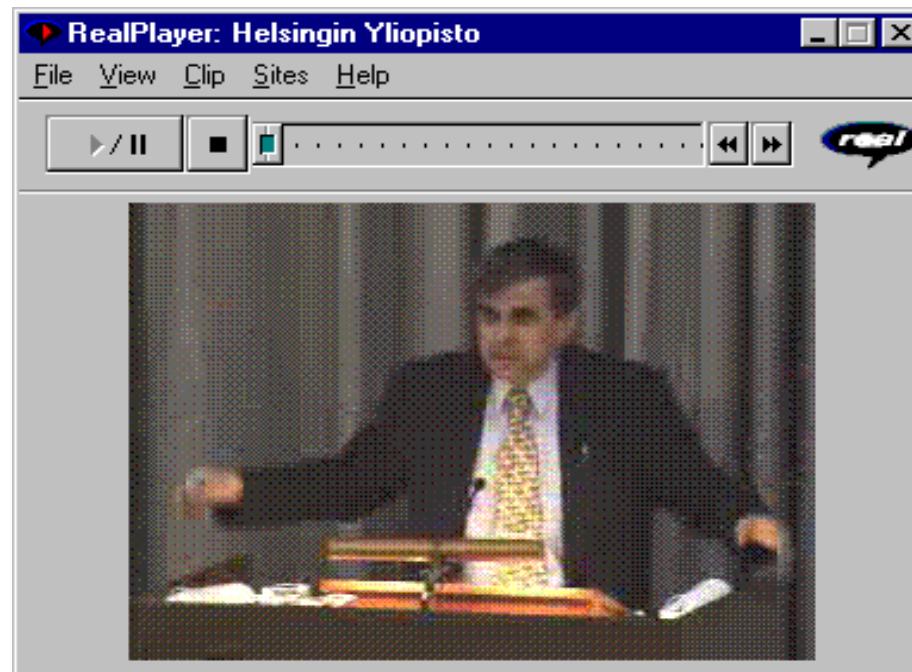
Residential video communication in Arena





New TV-stations

- Helsinki University: “Studia Generalia” lectures



Source: Helsinki University, <http://www.helsinkiarena2000.fi/videohuone/studia.html>



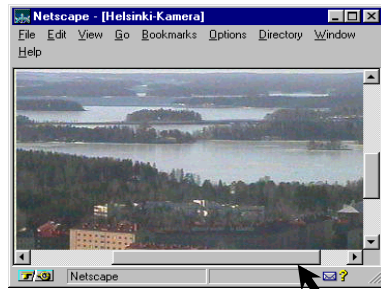
HELSINKI MIGRATES TO VIRTUAL REALITY

- **Community network needs a face**
- Virtual Reality meets real world so that every citizen has a place there
- **Soon Virtual Reality runs on home-PC**





3D-model in the network

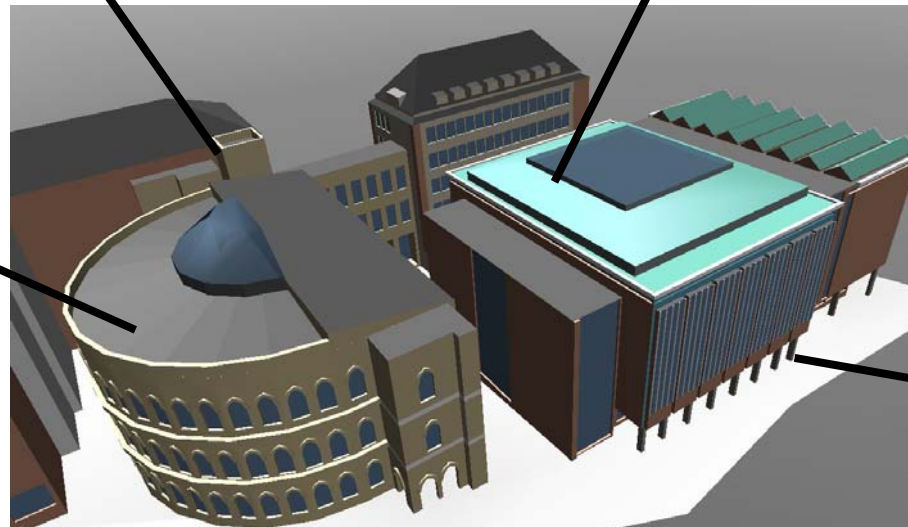


CAMERA

WWW-page



TELEPHONE CALL



CALL CENTER



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Virtual Meeting Point



- Profiled anonymous contacting
 - Chat (text)
 - Speech
 - Body language



HTC TRANSFORMS BASIC TELEPHONE NETWORK INTO A MULTIMEDIA NETWORK

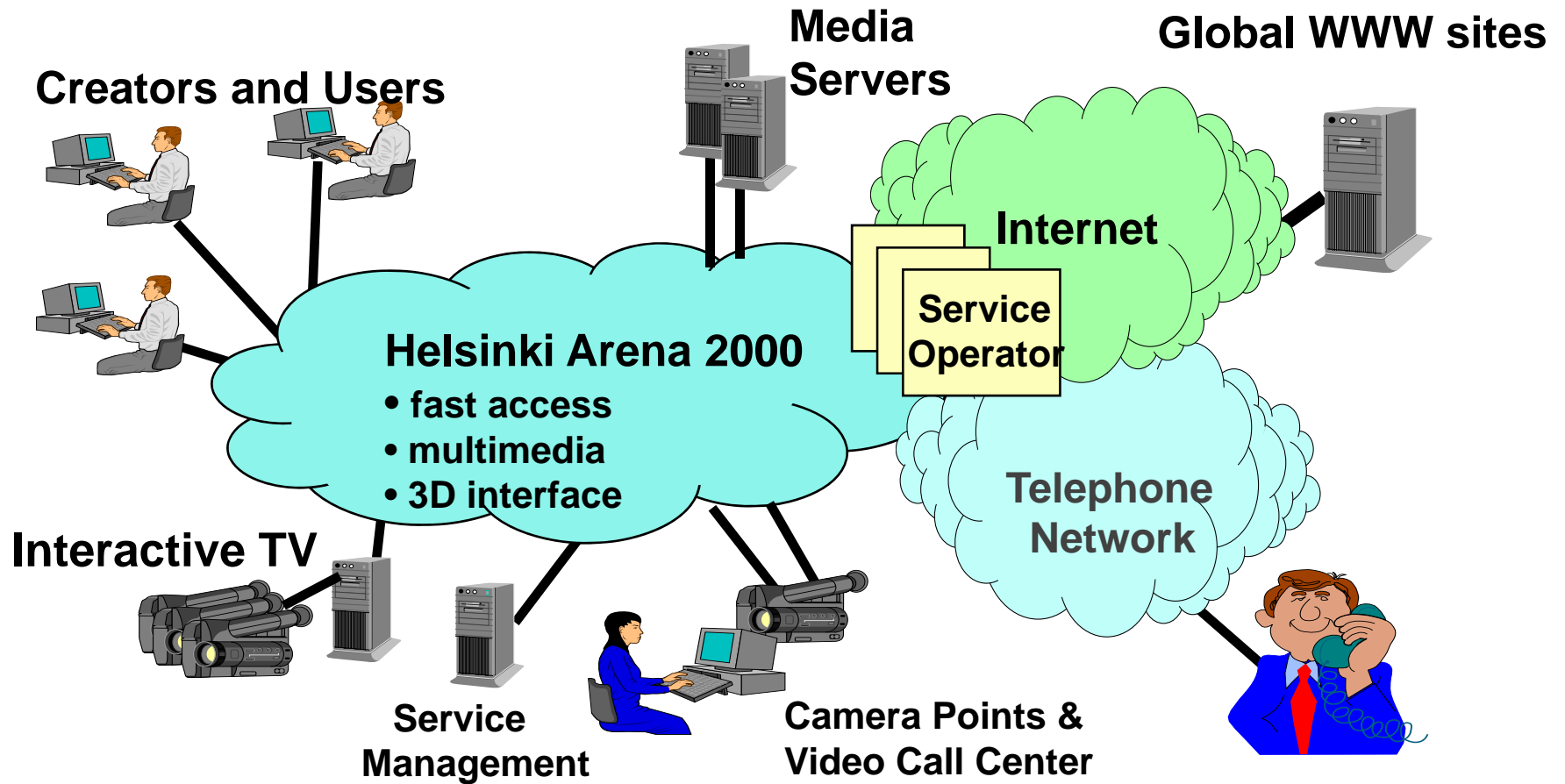
New network is based on internet technology

- Community Network covers 80% of citizen's communications needs
- Besides web this network also connects people, facilities, household appliances etc.





Network Architecture





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HTC's third generation network services

User's access

- **ISDN and modem (new local IP price)**
- **Full ADSL availability by the end of year 2000**
- **Open for all service providers (ISPs)**

Transmission rates

- **modems, ISDN (128kbps) and ADSL (up to 6Mbps) supported**

Applications

- **All applications supporting Internet Protocol (www, remote working, Internet-phone, video conferencing, video streams)**



HTC's third generation fixed network

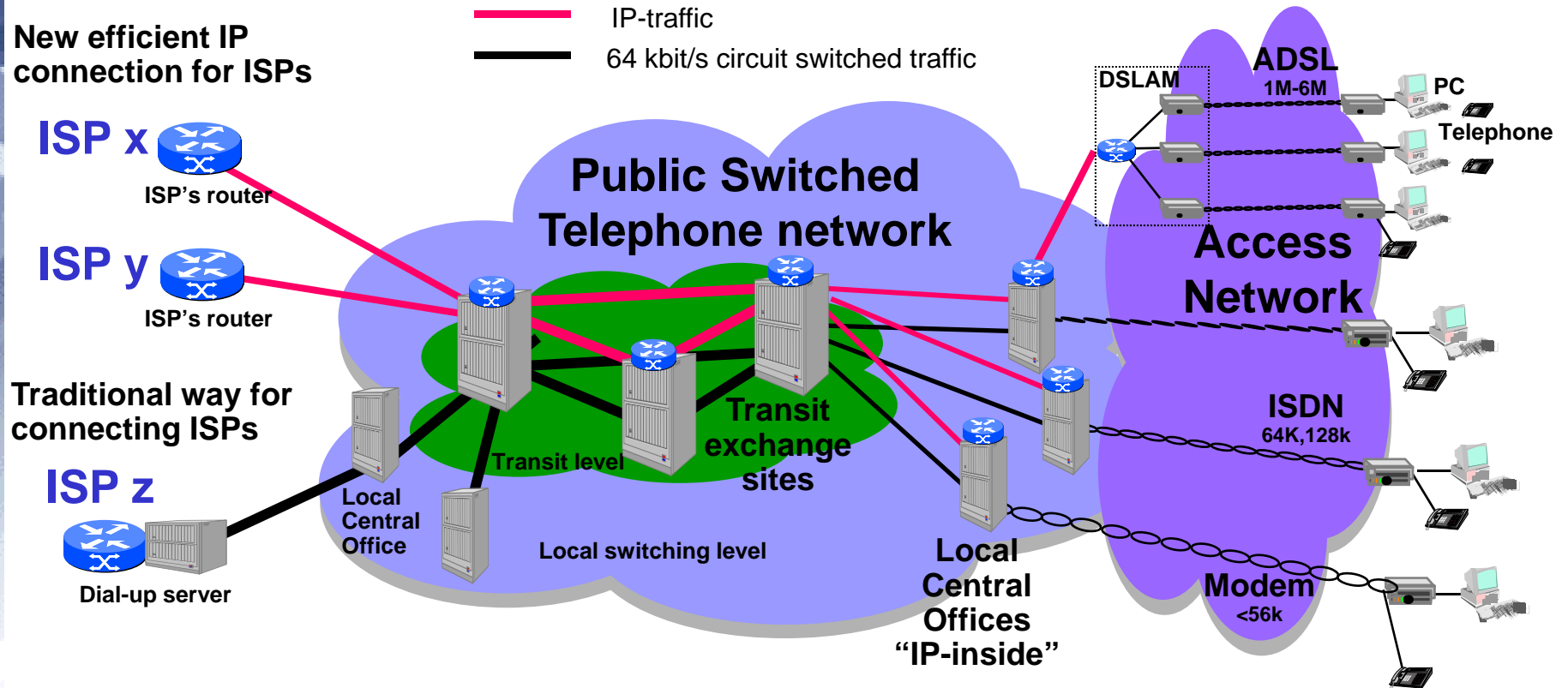
New efficient IP connection for ISPs



Traditional way for connecting ISPs



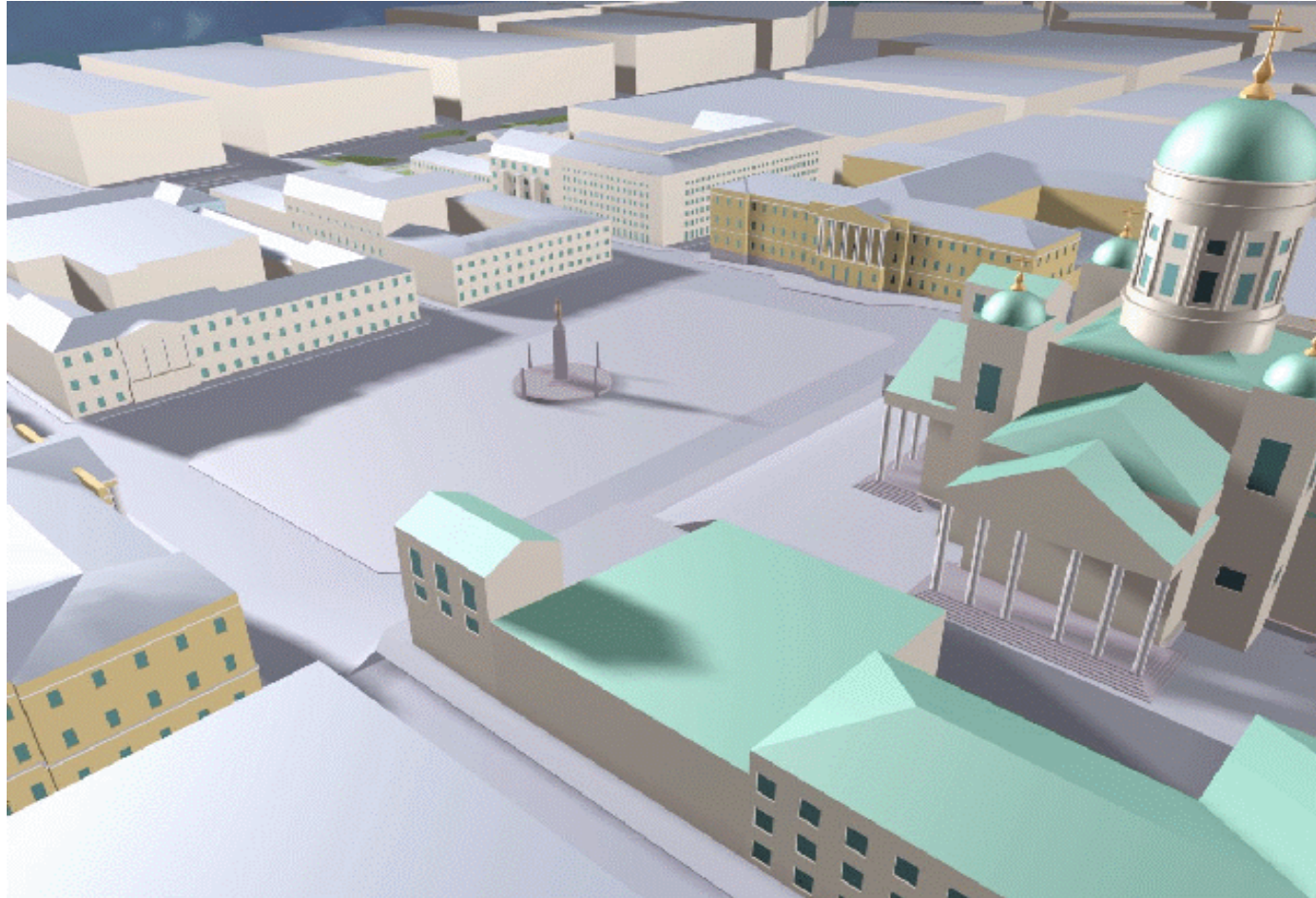
— IP-traffic
— 64 kbit/s circuit switched traffic



More Information



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<http://www.helsinkiarena2000.fi/>