What video applications brought to IP network

MA Yan, BUPT

ABS'2005

Kyoto

Topics

- Major features of video applications for broadband service
- Current broadband video services worldwide
- Current broadband video applications in China
- The impact and solution
- The future

Major features of Video Services (VS) for broadband service

- Category
- Bandwidth
- QoS
- IPv4 migrate to IPv6
- Charging model
- Content building

Category

- Way of transmission
  - Unicast (one to one) / Multicast (group) / Broadcast
- Way of providing the service
  - Centralized / Distributed / P2P
- Way of access media
  - Wired / Wireless
- Way of program receiving
  - One way receive / Interactive
- Way of payment
  - Charging model

Bandwidth

- Diversed access media
  - WLAN
  - ADSL
  - Ethernet to home
  - Fiber to home
  - Wireless by Telecom industry
- Bandwidth requirement in service provider side/end user side
- Compression method used for streaming service
  - MPEG1, MPEG2, MPEG4, H.264
  - Real/.rm , Macromedia/flash, peercast/pls, … ???

QoS

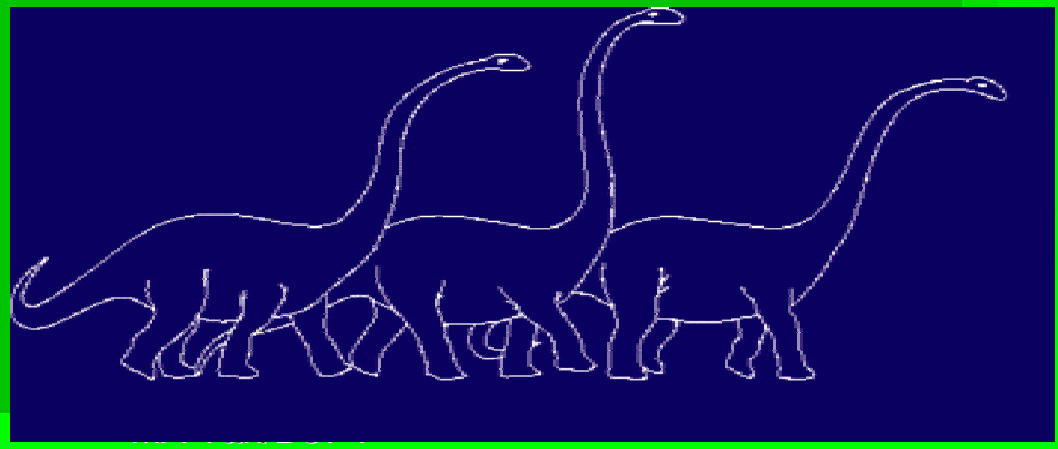
- Background technical support
- Implementation issue
- Engineering issue
- Service provider side
  - Need total solution from central server-network-user
- End user side
  - Intelligent terminal need fine tuning, may arose complain from end users
- Compare with TV industry, streaming over IP network still need more work

IPv4 migrate to IPv6

- Vast address space provided by IPv6
- Various kind of video sources
- For different services
- Quality of service
- Mobility support
- Secured service
- Easy to configure

Interactive

- Getting more and more popular
- Typical video application on IP network
  - Video conferencing
  - Video phone
  - Interactive TV
  - Video on demand
  - Virtual reality, virtual museum, online shopping, …
  - Video gaming
  - …



Charging model

- Flat rate
- Volume based
- Member based
- Per-view based

Content building

- Content area
  - Commercial
  - Ad hoc
  - P2P, Personal station
- Tools
- Social impact, censorship

Current broadband video services worldwide

- Type of services
  - Broadcast, interactive (one to many, one to one, many to one, many to many)
  - video on demand, online gaming, online shopping, online video search, video conferencing, IPTV, …
- Some solution providers
- Success story

Practices

- Model of service provisioning
  - Traditional TV/Media industry alone
  - Traditional Telecom industry + content provider
  - TV + Telecom form new alliance
- Swiss Telecom, Italy Telecom, ChinaTelecom, Bell South, India Reliance Info Telecom, and many other carrier service providers launched their trial project
- More ambitious plans are underway
  - Ireland Magnet, Atlas Interactive and I-Spatial Communications in India prepared to offer IP-TV service
  - SBC invests $4 billion to revamp its network for streaming service
  - BBC start the trial with Flexible TV system in 2004
  - …

Available P2P streaming tools

- **One to one**
- **One to many**
  - **ESM, ZigZag, DirectStream, P2Cast**
- Many to one
  - **PROMISE, CoopNet, GNUStream**
- Many to many

- The P2P traffic is now the top contributor to Internet traffic.

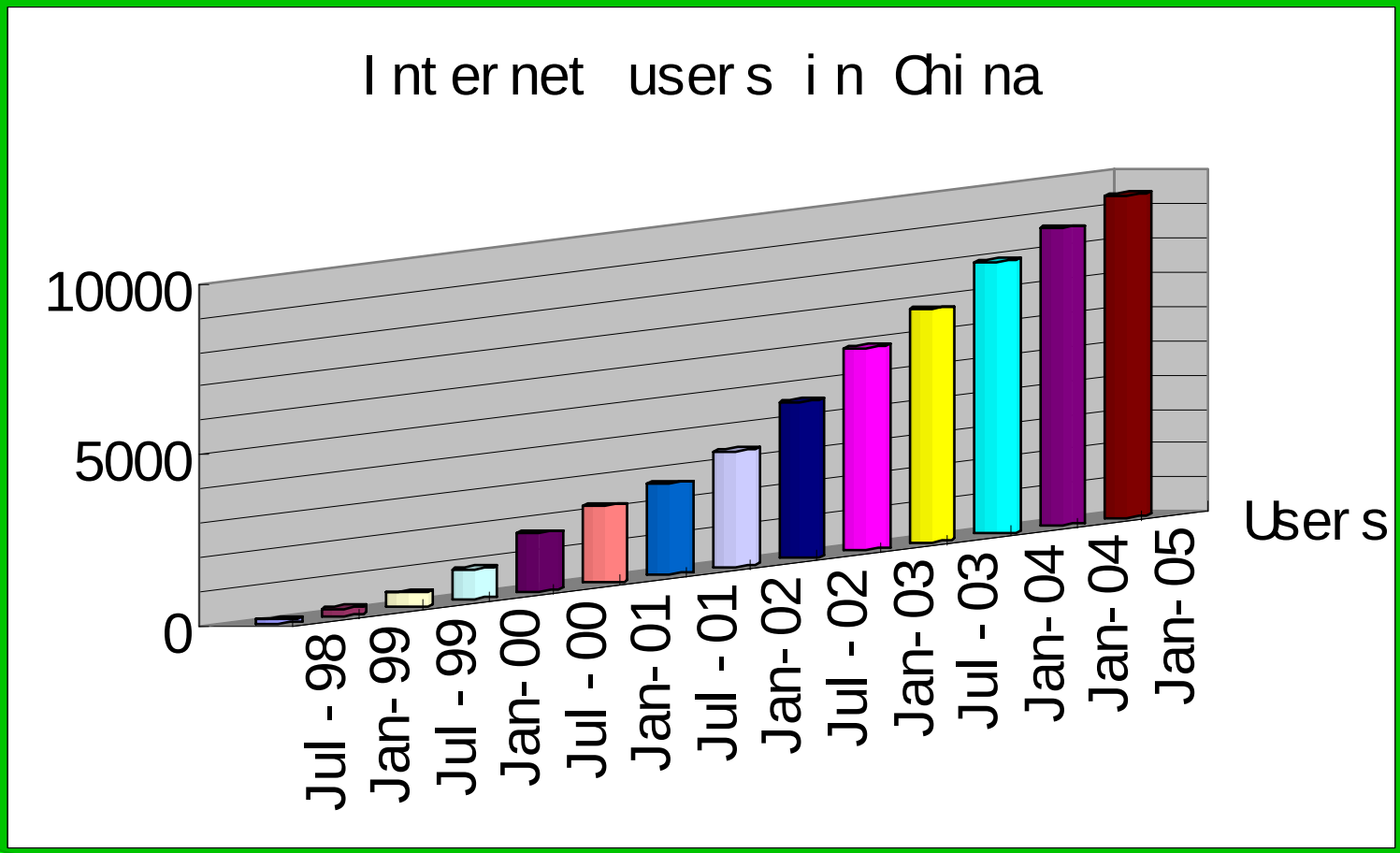
Current broadband video applications in China

- Online games,
- TV programs
- Education

42 Million broadband users in China

- 42.8 million broadband users out of 94million in China by Jan.2005.

CNNIC, Jan.2005



Sample applications

- Online game producer, ShangHai based Shanda Entertainment
  - "IPTV will be a focus point for Shanda in 2005, MP3, online games and movies etc. will be available in IPTV channel", CEO of Shanda said. http://www.shanda.com.cn
- Online course, YanYuan online course project, Peking University
  - Over 12,569,855 visits
  - The method and practice of developing online video course will benefit not only for students already in campus, but also for those outsiders in an even larger scale. http://realcourse.grids.cn
- Online TV, Anysee project, Huazhong University of Science and Technology
  - Over 10,000 users http://grid.hust.edu.cn/anysee/
- Video Conferencing

Video Conferencing

2005, the year of Net-TV

- <北京网 >Beijing IPTV started its trial operation in Dec.24, 2004, run by Radio Beijing, supported by China NetCom Co. http://www.bjiptv.com.cn

- < 方网 >Oriental NetTV started its full operation in Jan.28, 2005, run by Shanghai Media Group, supported by China Telecom. http://www.ontv.sh.cn/

- Xinhua News Agency, China Radio International, China National Radio, all most all media group started their online service
- China Telecom, China NetCom, all most all major telecom player focused their attention to IPTV
- Many VoD service companies started their businesses

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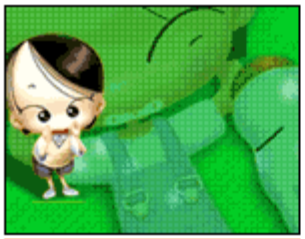

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未知区域

The impact and solution

- Internet infrastructure to be enhanced
- Internet penetration still low
- Build killer applications
- Contend building
- Service/Business model
- Regulation issue for service providers

The future

- Strategic planning needed
- Development of Content building tool, service monitoring tool, service provisioning tool
- Quality guarantee mechanism

- Market is booming

THANKS !