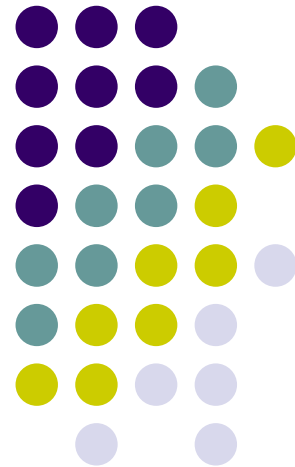


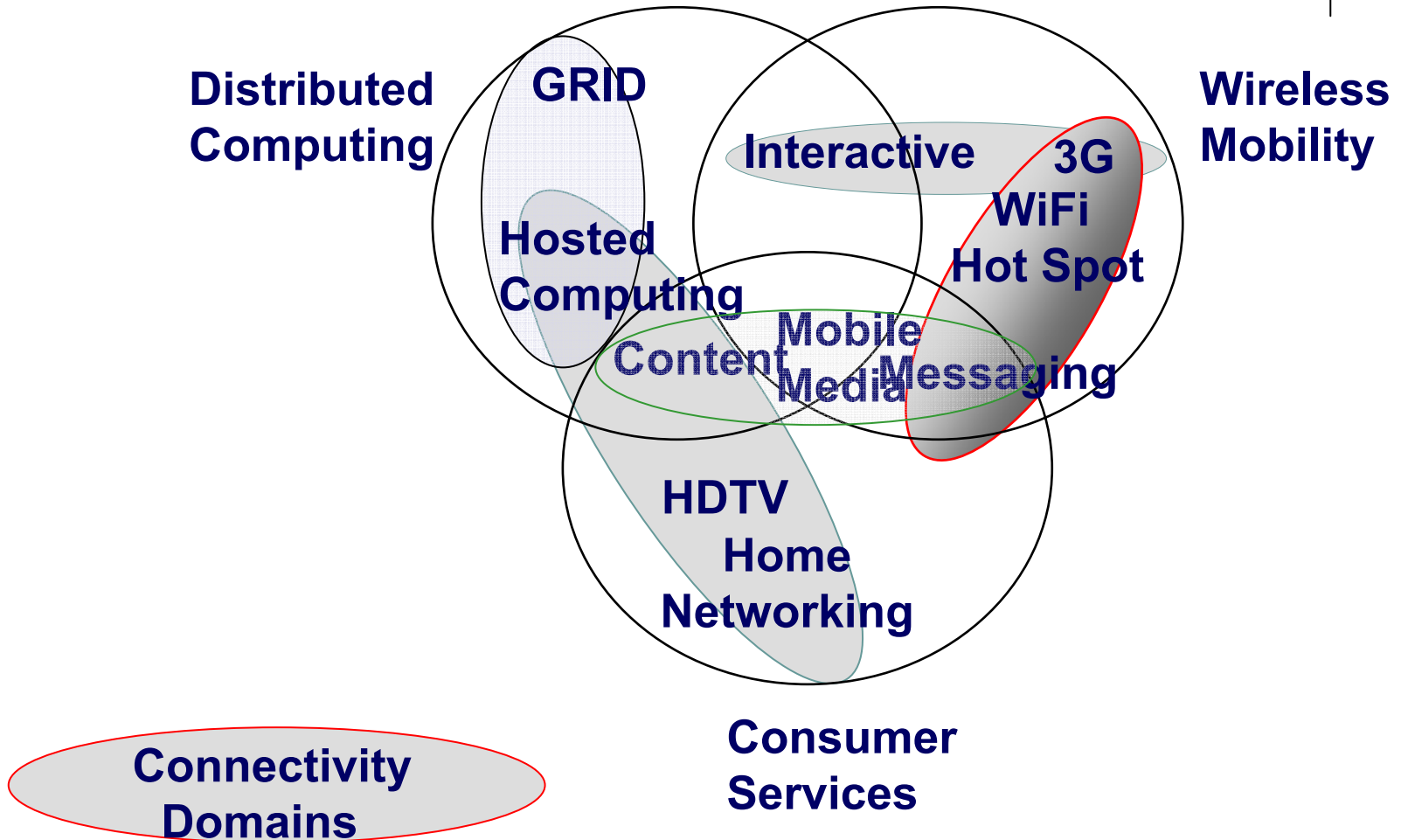
IPv6 Up-date

Bosco Fernandes
IPv6 Forum & European TF-
Steering Committee





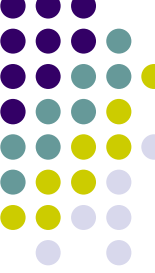
IPv6 is a natural convergence protocol for tomorrow's IP centric world





CURRENT STATUS

- **IPv4 faced with a dramatic rise in requirements**
- **Other technical advantages are only potentially interesting for the moment and do not constitute IPv6's prime asset :**
 - Hierarchical addressing to optimise routing
 - Native IPsec
 - Multicasting
 - Mobile IPv6
- **IPv6's core is now stable and allows the protocol to be deployed commercially for some Industries.**



Some perceived IPv6 drivers



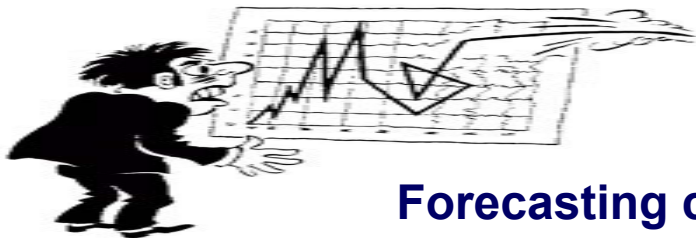
- Mobile IP
- Peer 2 peer networking
- Peer 2 peer gaming
- Peer 2 peer voice over IP
- RFID networks
- Sensor networks
- Microsoft
- Critical mass of digital end-user devices
- Critical Mass of ADSL and cable digital access
- Wi-Fi, Wi-Max, Mobile-Fi, Zigbee....
- National policies and economic weight

Disruptive potential on existing carrier business models???



Major Break-through

- **US DoD Commercial deployment by 2005-2007.**
- **Since than, German MoD, Nato and others have shown strong interest in IPv6.**
- **3G Wireless mandatory deployment Release 5 & 6 beyond of IPv6 for Internet Multimedia Subsystem and IP Wireless Mobility.**
- **Consumer and Appliance Electronic Industry deployment.**

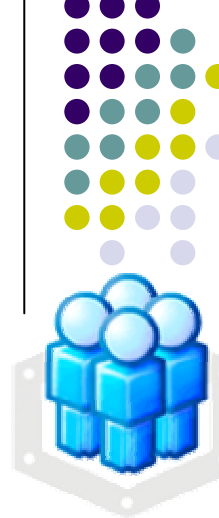


Forecasting can have unpredictable results

Peer to peer networking as IPv6 Driver

- Entertainment content sharing

- Napster, Kazaa, Morpheus,
- Grokster, Gnutella ..



- Science content sharing

- Quarknet
- SDSS
- Neptune...



Distributed Computing

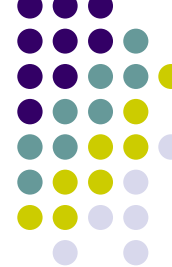


- Distributed data processing

- SETI@home
- Folding@home
- Fightaids@home...



P2P gaming as IPv6 Driver



- Gaming market is projected to exceed \$5 billion by 2006
- On line gaming today is mostly client/server: creates serious bandwidth and processing bottlenecks
- Xbox and Playstation are IPv6 ready
- Sony's Everquest: (as reported in Asian WS Journal nov 26th 03)
 - Role-playing on-line fantasy game
 - 500,000 users worldwide
 - Average 22 hours/user.week on-line
 - Characters and treasures existing only in virtual world are even traded on E-Bay!!
- Number one on-line game in China has 800,000 concurrent users!
- Korea's Ncsoft becomes the number one on-line game developer.



Support for IPv6 Ready Initiative



- To avoid confusion in the mind of customers, a unique logo programme has been defined.
- The IPv6 logo will give confidence to users that IPv6 is currently operational.
- Open and can be achieved with ETSI.





Wi-Fi, Wi-Max, ZigBee, Mobile-Fi, Ultrawideband....



- Will the convergence of cellular telephony and IP come on the heels of fixed line telephony and IP?
- VoIP is considered disruptive for fixed line carriers business models at this stage. Will cellular telephony be the next battlefield?

Business Week,
April 26th 2004

A WEB OF WIRELESS INNOVATION

Cutting-edge technologies are being pushed along by upstarts and tech giants alike. Here are some of the leaders in each area:

ZigBee

Industry giants Motorola, Royal Philips Electronics, and Samsung, as well as upstarts Millennial Net and Ember, are expected to reap big benefits from making ZigBee sensors.

2003 REVENUES	2007 REVENUES
\$0	\$3.5*

Wi-Fi

Intel is the big winner here, after using its marketing muscle to build demand for Wi-Fi chips in laptops and other devices last year. Wireless carrier T-Mobile has been the most aggressive in rolling out public Wi-Fi service, with 5,200 locations.

WiMax

Trying to repeat its Wi-Fi success, Intel threw its weight behind the standard last year. Telecom-equipment giants Alcatel and Siemens and upstart radio-equipment makers Alvarion and Aperto also stand to gain.

2003 REVENUES	2007 REVENUES	2003 REVENUES	2007 REVENUES
\$3.3*	\$6.4**	\$0	\$5.4*

Mobile-Fi

Infighting between Japanese wireless giant NTT DoCoMo and startup equipment makers Flarion and Navini is expected to delay the standard until 2005 or 2006. Still, the upstarts are conducting trials with wireless carrier Nextel and South Korea's KT Telecom.

Ultrawideband

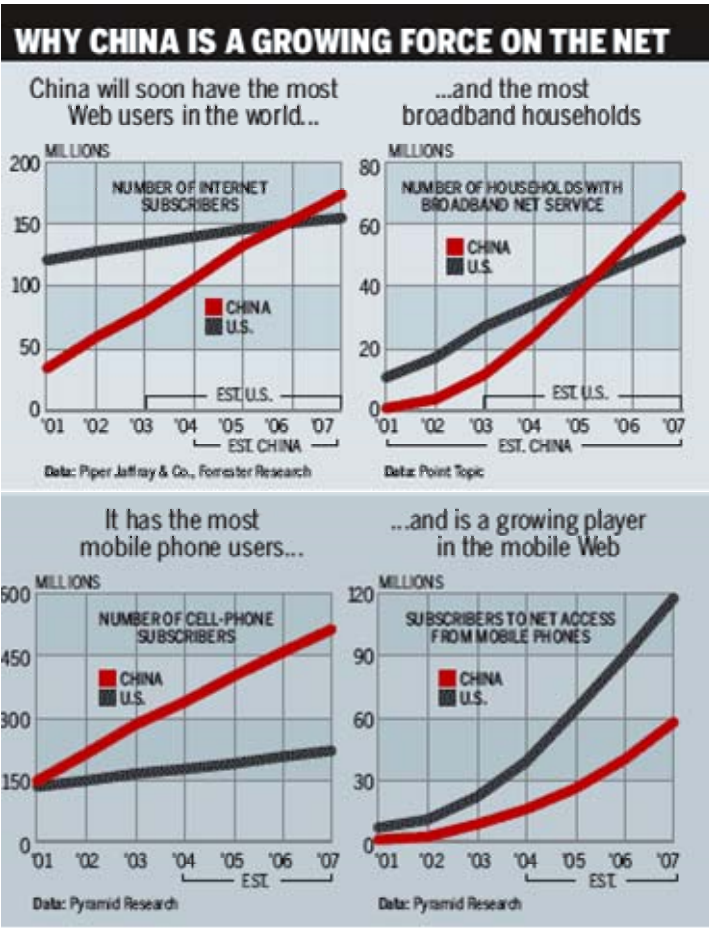
A war over competing technologies between chipmakers Texas Instruments and Intel on one side and Motorola on the other has stalled work on this standard. Both sides may simply release their products and let the market sort out which is best.

2003 REVENUES	2007 REVENUES	2003 REVENUES	2007 REVENUES
\$0	\$918*	\$0	\$1.1*

All figures in billions *Estimates **Includes preliminary IDC estimate
Data: Rutberg & Co., Wireless Data Research, Parks Associates, IDC, Visant Strategies Inc.



LARGEST IPv6 NETWORK in the World

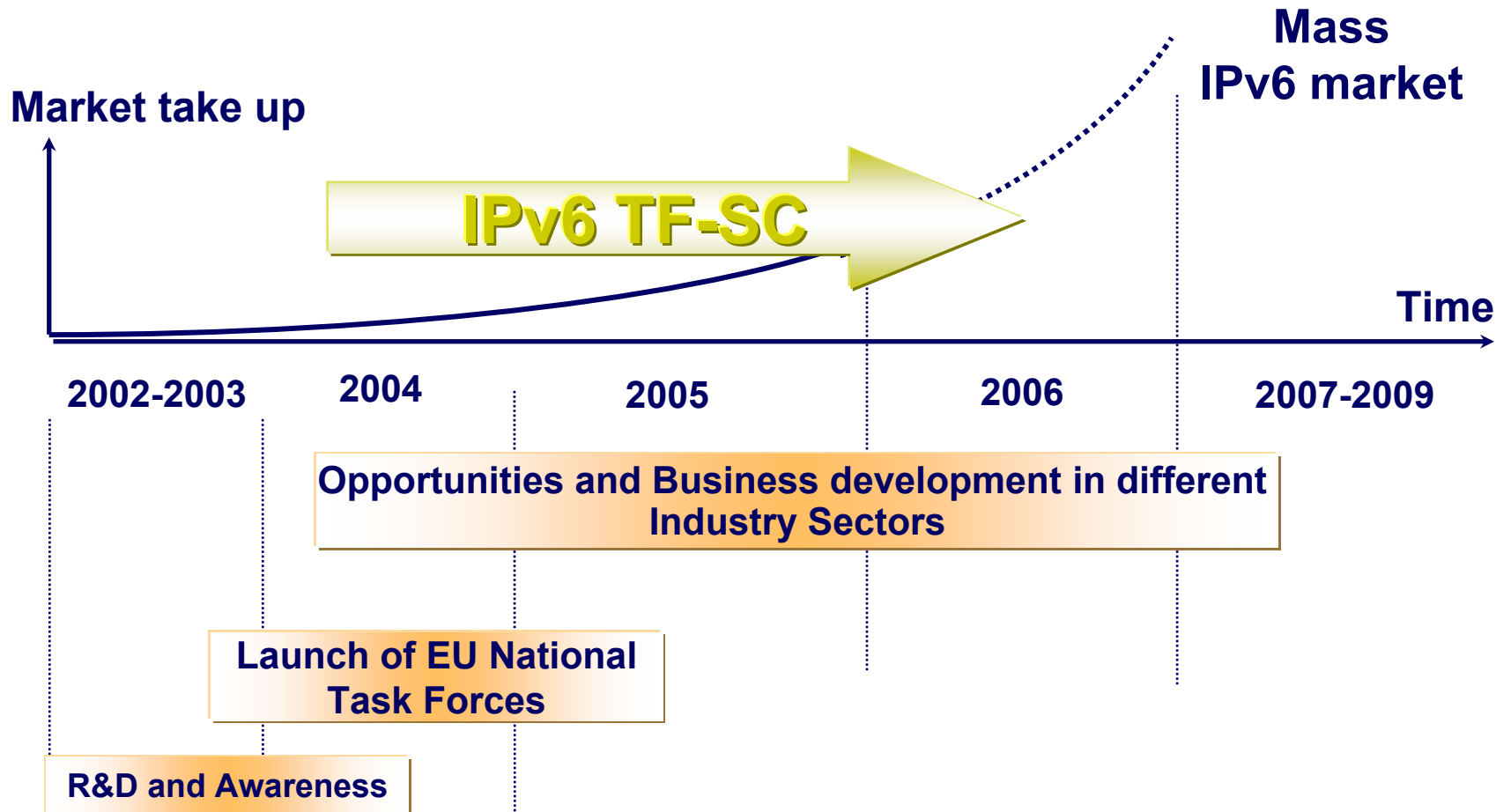


China's weight in the internet balance

Source: Business Week
March 15th 2004 issue



Time scales & role of the IPv6 TF-SC

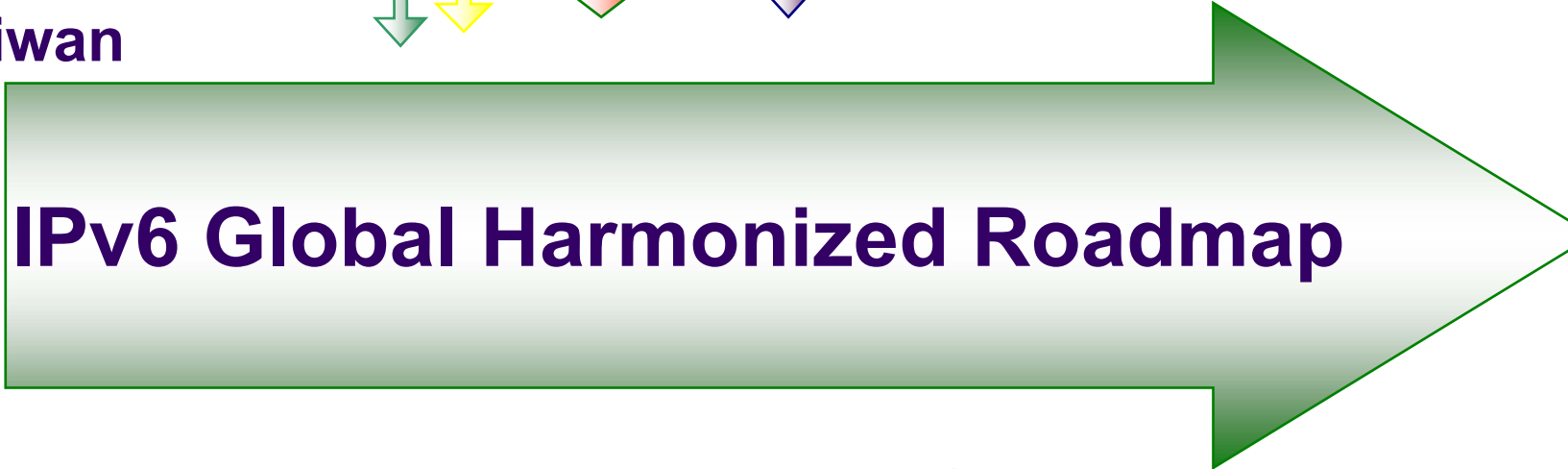
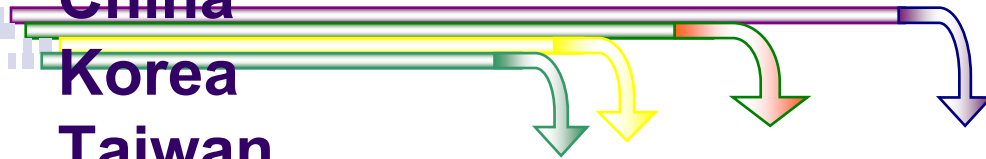




REGIONAL IPv6 TASK FORCES



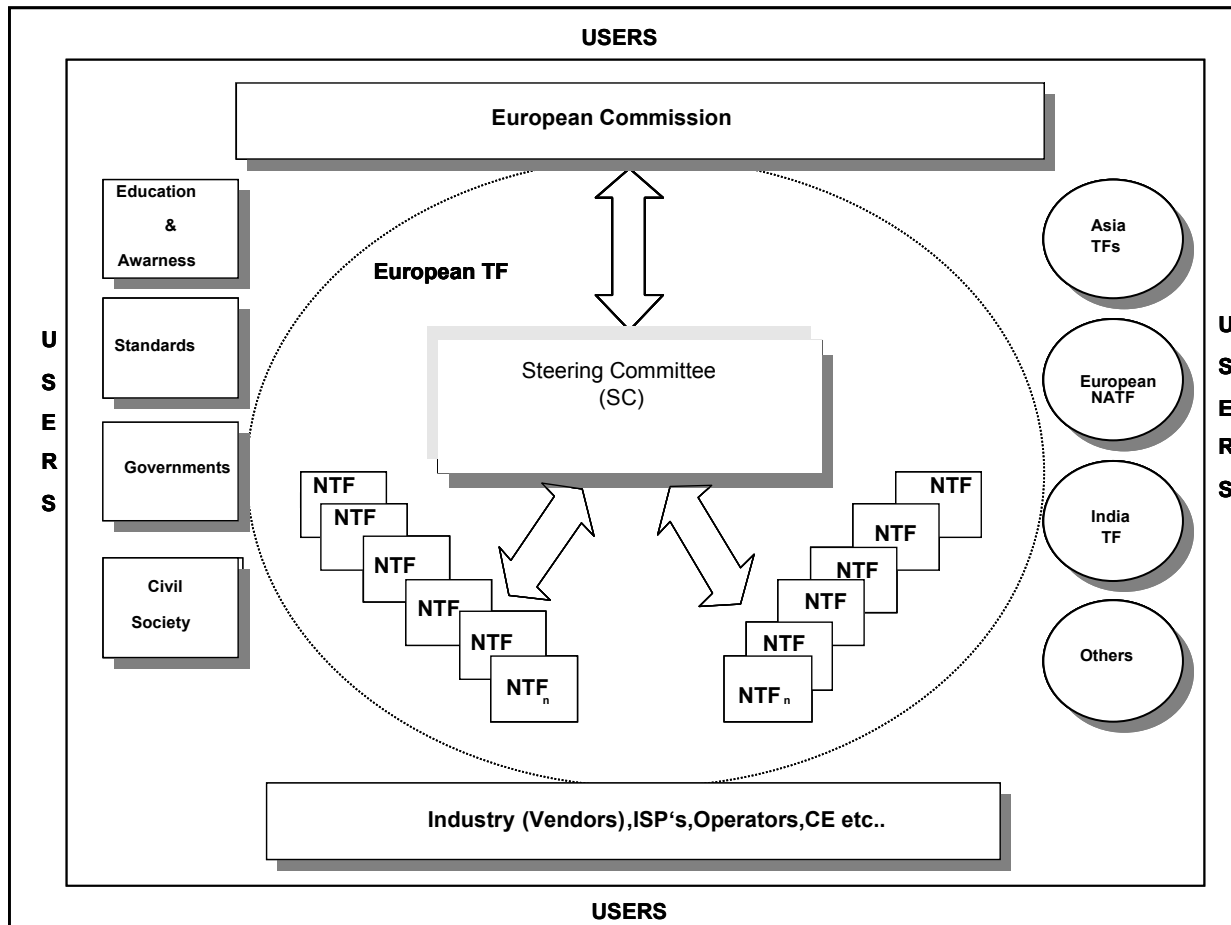
JAPAN
US
China
Korea
Taiwan



2001 2002 2003 2004 2005 2006 2007 2008 2009 2010



All Inclusive Approach

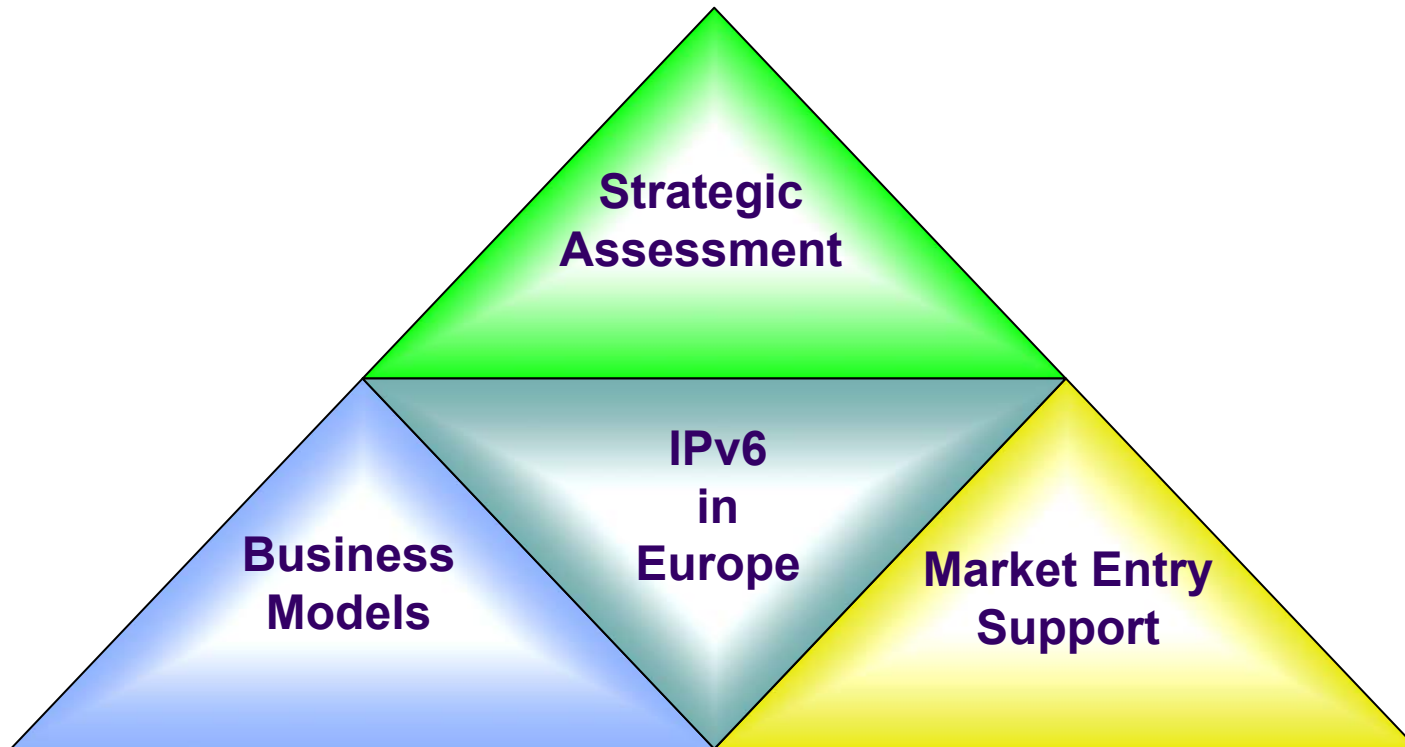


eEurope 2005 IPv6 Strategy & Roadmap



“The eEurope 2005 IPv6 Challenges”

Objectives and Goals of Phase III



**Focus on Industrial deployment in EUROPE !!!
Not a Research Project.**

Conclusions

- Can the Telecom's Industry afford to run the risk of losing their competitive edge within a few years.
- IP Networks will provide efficiency and cost effectiveness.
- Sony had already announced that starting 2005 all its products will be IPv6 enabled. The Microsoft Xbox also. Let the battle start!
- The emphasis is now placed on adopting IPv6.
- Obviously more compelling in South Asia at the moment but also picking-up in other regionals very fast.

Yes, IPv6 will be a success...it's moving much faster than we thought !

