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IPv6 in Japan

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Agenda

- Mission context
- Preconceived ideas
- Real situation
- Japan « chances »
- Moving the center of the Internet
- Europe's role
- Conclusion

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Context of the mission

- European delegation in Séoul and Tokyo (03/2001)
- SST of the french Embassy in Tokyo
- Delegates
  - A. Baudot, France Telecom R&D
  - P. Bereski, Alcatel R&I
  - P. Cocquet, 6Wind, IPv6 Forum
  - T. Noël, Université de Strasbourg
  - L. Toutain, Ecole Nationale Supérieure de Télécoms de Bretagne
  - B. Tuy, Renater
- G6

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G6 group

- G6 is dedicated to people concerned w/ IPv6 tests
  - Both academic and industrial partners
- Launched in 1996
- Started the 6Bone w/ WIDE and Univ. Copenhagen
- Member of the IPv6 Forum
- Created the first IPv6 network in France : G6bone
- Goal is to get experience with IPv6 and share the knowledge
  - Book published (3rd version in preparation)
  - Web sites, tutorials, …
- Today, G6 people are managing Renater's IPv6 Pilot

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Visited Organizations

- Fujitsu
- Hitachi
- IIJ
- JPNIC
- Matsushita/Panasonic
- NII
- NTT
- Sony CSL
- WIDE

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Preconceived ideas

- IPv6 everywhere …
  - Networks, computers, phone devices, home devices
- Commercially available from ISPs
- Mobile phones w/ IPv6 stack …
- Official addressing plan already deployed
- IPv6 name service operational …

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Real situation

- IPv6 is *in tests* « everywhere » …
  - Not only in the network components
  - Various devices
    - PDAs, cell phones, cars, TV sets, fridges …
  - Couple of prototypes are ready for industrialization
    - Routers, home gw, fax machines, …
  - ISPs are deploying pre-operational networks
    - IIJ, NTT, …
  - …

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Japan « chances »

- WIDE consortium
  - Coordinates Internet activities
  - Official position (MPT)
  - Gathers an impressive budget
    - 100M USD for IPv6 implementations and testbeds
  - 15 persons were coding the IPv6 KAME stack
  - Very active in the standardization process (IETF)
    - Succeeded in BSD stacks convergence …
- Political decision
  - Prime Minister stated Japan choice is IPv6 (1998)

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Japan « chances »

- Belief
  - Internet technology is the future of telecoms
  - Main change : huge amount of devices will communicate each others
    - At home, in the transportation means (cars, airplanes …), at the office …
    - Always on devices (emergency situations, remote control …)
  - Communications will be wireless
    - No need to install cables, fibers …

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Japan « chances »

- Consequences
  - All industry sectors are implementing Internet technology in their equipments to cope with this vision
  - Tremendous need of new IP addresses
  - Added to mobility and security needs

  => IPv6 choice *de facto* !

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Moving the center of the Internet

- IPv4 has provided a wide technological advantage to North America
- Resulting in important financial gains in the computer technologies, networking and telecoms

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Moving the center of the Internet

- Japan –and Asia- has understood the IPv4 address space exhaustion is a unique chance not to miss
- IPv6 will provide them –and their allies- a good chance to become more influent in Internet technologies and their related markets
- To achieve this goal they’re ready to ally with Europe –at least with those active in this field and sharing the same ambitions

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Europe's role

- WIDE and G6 know each other for a while
- And are being to set closer research collaborations up
- Other partners will be invited to join this arena to speed up the IPv6 spread out

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Europe's role

- Every european partner will need a strong financial support to become a « real » vis à vis to japanese
  - IST (others ?) programmes are very important
  - National programmes (french RNRT, …) as well
- Strengthening IPv6 at the european level will encourage national IPv6 initiatives and political decisions
- To this respect, connectivity between Europe and Asia is becoming strategic

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Conclusion

- North America seems not to worry with IPv6
  - Large amount of IPv4 addresses are still unemployed and reserved for US organizations
  - « *Functional capabilities of IPv6 have still not yet gain the same level as IPv4 ones …* »
- Nevertheless a couple of sub-TLAs have been already allocated
- « traditional » networking vendors have still a « soft » commitment to IPv6 implementation
  - *« where's the market ? »*

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Conclusion

- Asia and Europe seems to have a « small » but real advantage today to turn Internet technologies into a hudge market development and benefices in their respective « influence areas » …
- It's our collective mission and responsibility not to miss this unique opportunity

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Q ?

and may be …

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