

# Names, Numbers and IPv6

## ICANN's role in the shift to IPv6



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19 November 2008



17-19 November 2008  
Canberra, Australia

## Agenda

- Factors driving IPv6 deployment
- User expectations
- ICANN's role
- IPv6 in the Asia-Pacific region
- IPv6 time has come
- Overcoming impediments to IPv6 deployment
- What remains to be done



## Factors driving IPv6 deployment

- Business case —
  - Cost savings
  - Potential for larger networks
  - Simplified network designs
  - Elimination of expensive middleware systems
  - Greater network - and Internet - stability and security
  - Potential inherent in new, improved net-centric products and services
- Technological virtues and potential have not caught on



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## User expectations

- IPv6-enabled networks offer greater sustainability as the Internet evolves
- Increasing demand for products and services by developing countries
- Next billion users will connect using mobile devices to take advantage of
  - Evolving new services based on proximity — banking and financial services, healthcare monitoring, appliance monitoring, communications, social networking
  - Evolving new products — smart objects, RFID-embedded objects, Internet-enabled as standard
  - Convergence of other uses with devices
- All this requires the ability to assign a unique IP address to each individual device



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## The Internet of the future

- Mobile devices and services will overtake conventional "stationary" Internet access

**Worldwide Mobile Social Network Users, 2007-2012 (millions)**

	2007	2008	2009	2010	2011	2012
Mobile phone subscribers*	3,078	3,417	3,697	3,894	4,150	4,275
Mobile Internet users	406	490	596	757	982	1,228
<b>Mobile social network users**</b>	<b>82</b>	<b>147</b>	<b>243</b>	<b>369</b>	<b>554</b>	<b>803</b>
Mobile social network users % of mobile phone subscribers	2.7%	4.3%	6.6%	9.5%	13.3%	18.8%

Note: \*data for 2007-2010 from European Information Technology Observatory (EITO), March 2007; \*\*registered users (identified by their mobile number) who create, edit and view personal content using their phone  
Source: eMarketer, April 2008  
094335 www.eMarketer.com

A confluence of events, ranging from 3G ubiquity to teens and young adults increasingly focusing on social networks for online communications, is fundamentally altering consumer expectations of cellular services.

Source: JupiterResearch

Internet traffic increases 53% since 2007

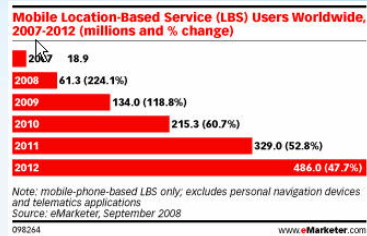
Source: msnbc.com



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## The Internet of the future

- Industry-wide efforts to capture exploding social networking market and migration to mobile ecosystem
- Industry initiatives in convergence, mobile content, mobile messaging
- New products (RFID-tagged devices) and services (banking/financial) offered every day
- Billions of Internet-enabled appliances at home, work, car, commercial aircraft, pocket
- O3b (other 3 billion people) initiatives



Every private network must connect to a secure, stable globally interoperable and scalable Internet



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## ICANN's role

- Work with Numbers Resource Organization and Regional Internet Registries to support IPv6 in —
  - Backend server support — EPP, RPP and the like
  - Frontend website support
  - IPv6 glue records in zone files
  - IPv6-enabled registration services
- Work with Internet Engineering Task Force and others to ensure that —
  - IPv6 is a first-class citizen in the DNS root zone
  - IANA can support rapid and universal IPv6 deployment



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## Asia-Pacific's role

- Asia-Pacific region leads in IPv6 deployment — a bit more than one-third of IPv6 space
  - Chinese government — CNGI backbone network designed as core of China's Internet infrastructure
  - Japan — customers using NTT's Flet services since 2005 (see <http://losangeles2007.icann.org/files/losangeles/presentation-ipv6-deployment-uematsu-28oct07.pdf>)
- To follow Asia-Pacific's lead —
  - Commercial ISPs must offer IPv6 services as part of their standard packages
  - Commercial network operators must support IPv6 deployment and services to remain credible



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## The time for IPv6 has come

- IPv6 business case is no longer hypothetical
- IPv6 is solving real-world problems
  - Managing enormous networks
  - Reducing operating and infrastructure costs
  - Smoothing the way toward continued network and customer growth



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## Overcoming IPv6 deployment impediments

- Three-pronged approach to increase awareness and advancement —
  - Strategic planning at the corporate level
  - Building long-term ROI into business model
  - Incorporating technical knowledge at a tactical level



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## What does the future hold?

- We do not know where the Internet's future lies
- Key factors to consider –
  - Internet and the domain name space are rapidly evolving
  - Wider variety of devices used to provide services
  - Evolving new services – banking and financial services and many others – based on proximity
  - Evolving new products – smart objects, RFID-embedded objects, Internet-enabled as standard
  - Convergence of other uses with devices
  - Increasing demand for products and services by developing countries
- A single, stable, globally interoperable Internet remains the foundation for all these innovations
- Internet stakeholders can choose to lead the Internet evolution



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## What remains to be done

- Five Australian groups that can and should move toward adopting IPv6
  - Federal/state governments must revisit policies to encourage IPv6 adoption
  - ISPs must offer IPv6 transport services and require vendors to supply IPv6 capable equipment
  - Enterprise CIOs must plan IPv6 transition now
  - Vendors must continue to develop fully capable IPv6 devices compatible with IPv4 standards



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Thank You

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