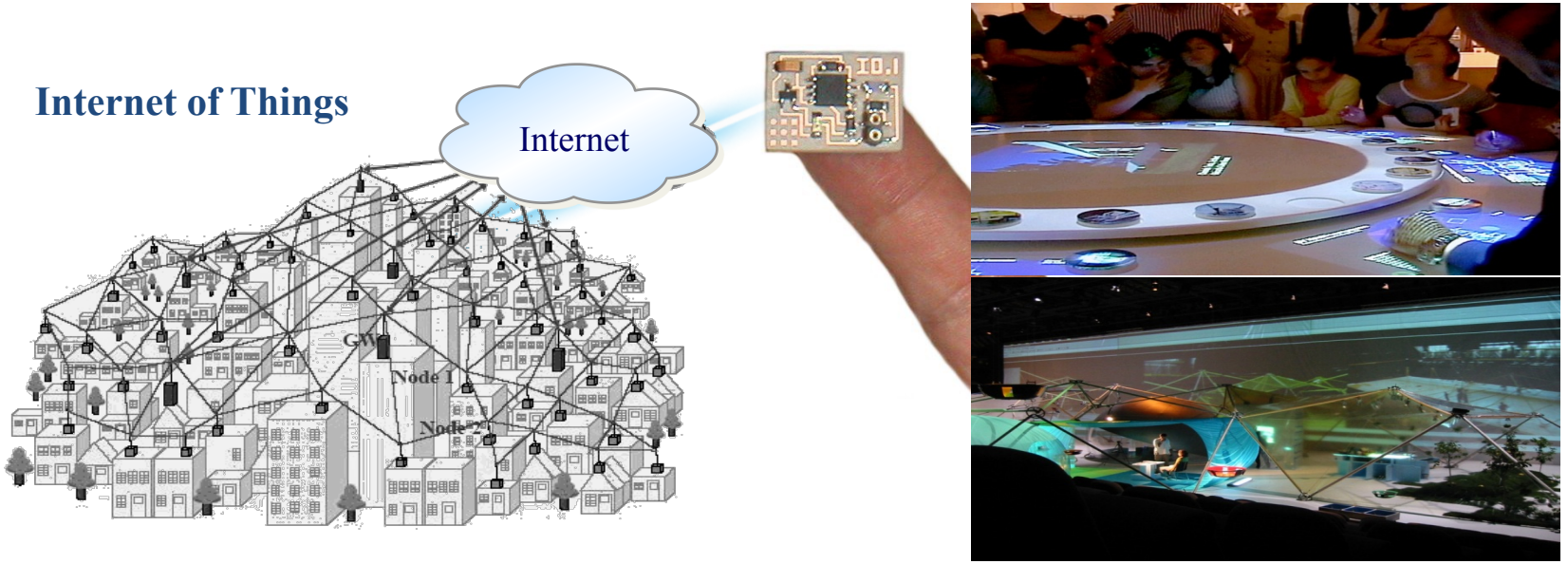
Samsung's IPv6 toward Smart World

Soohong Daniel Park, Ph.D.
Software R&D Center, Samsung Electronics, Co., Ltd.

Internet Zero and IPv6

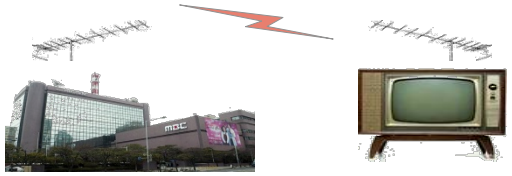
" This is the revolution for us ….. the emerging network of everyday devices was pa rt of an ***Internet zero,*** *not Internet 2.* It is a set of principles for extending the Intern et down to individual devices……."

- By Neil Gershenfeld, MIT



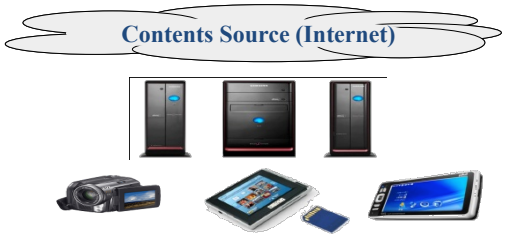
Evolutionary Contents Acquisition

Contents Broadcasting



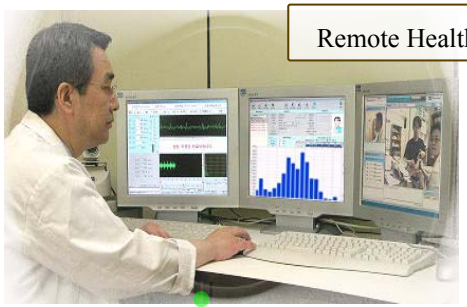
Contents Storage Media: Tape, C D, DVD, etc.

Contents Download via PC



Direct Contents Download through Internet

IPv6 enabling…



Medical Web

Remote Healthcare and Medical Service

Ubiquitous Web

Video on the Digital TV

Mobile Web

Real-Time Contents Generation

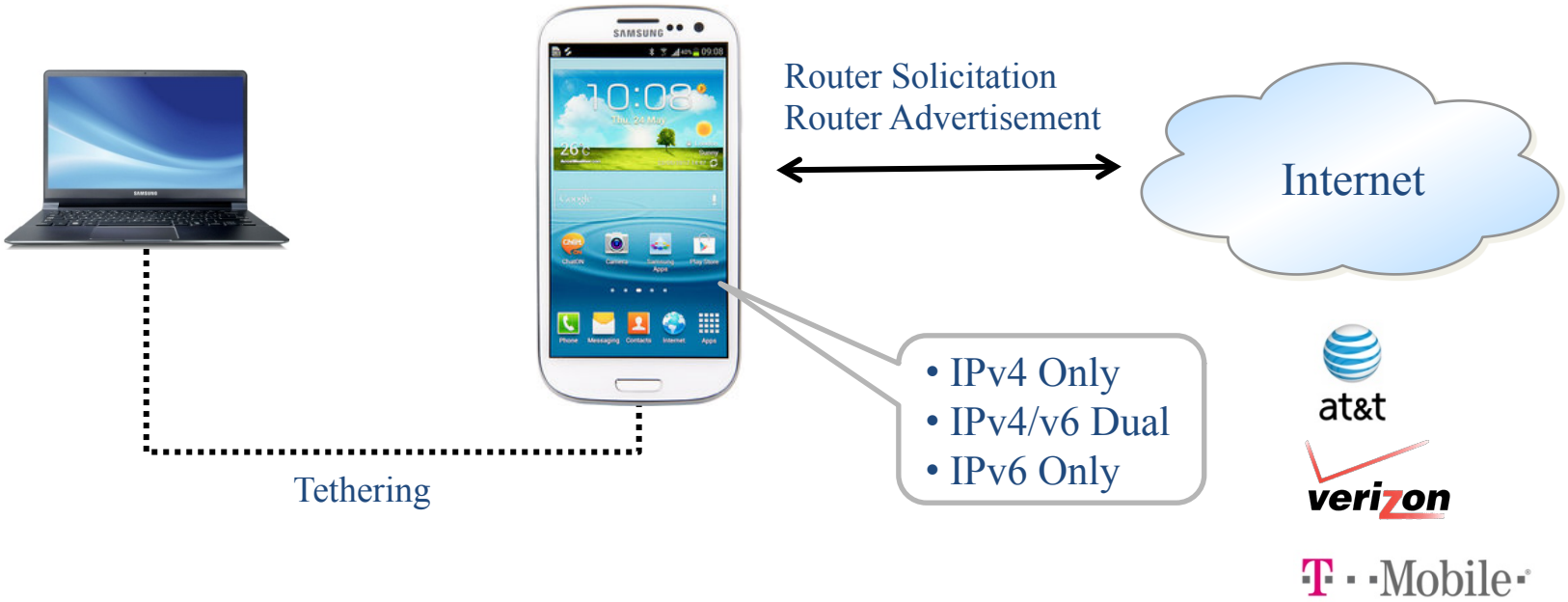
IPv6 in Samsung

In-Lab Projects

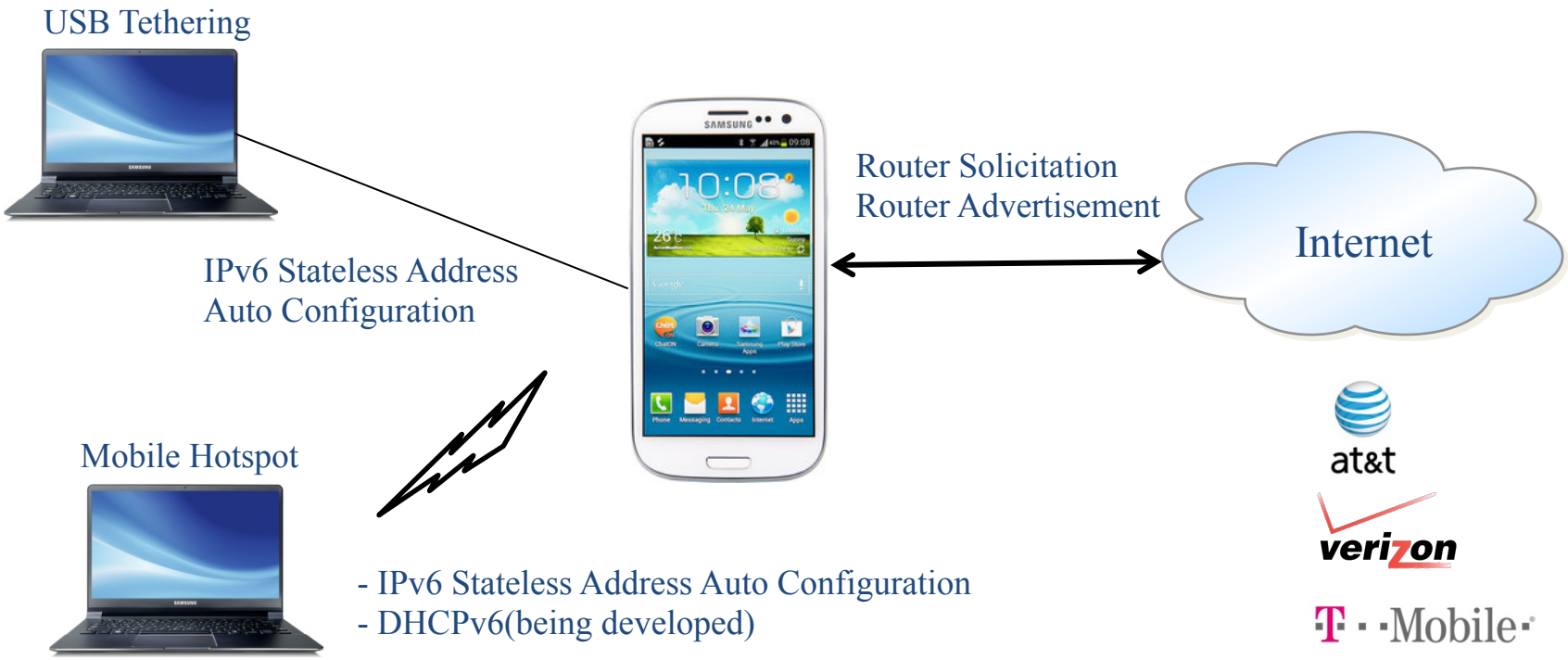
IPv6 Home Networking
Mobile IPv6/Fast Handover
6LoWPAN

Commercialized
(OS embedded)

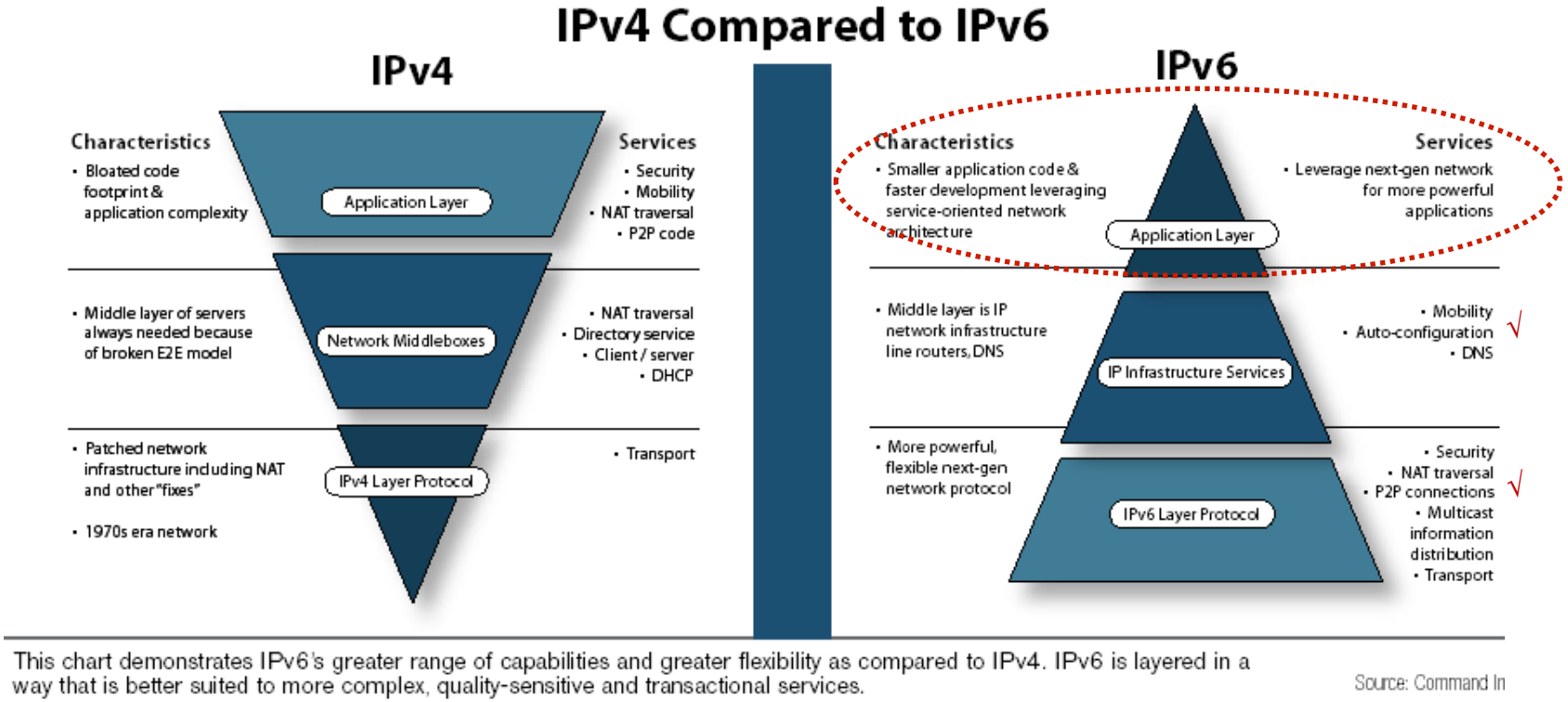
IPv6 @ Samsung Smart Phone



Support IPv6 Tethering



We are still digging into very small features of IPv6 such as P2P connections and Auto-configuration



Thanks to the owner of the original image:
David Green is vice president of R&D for Command Labs of Command Information, 2007

Voice over LTE using IP Multimedia Subsystem

GSMA had expanded upon the original scope of One Voice work to address the entire end-to-end voice and SMS ecosystem…

OTT (Over The Top) VoIP providers see the VoLTE network as an ideal platform for actually replacing the mobile operator's core voice service

Issues while deploying IPv6 in VoLTE

- **Only DNS response with IPv4 address**
- **Either IP configuration for IPv4/v6**
- **Different IPv6 address strategy on APN**
- **No IP layer response on during PDN connection**

APN: Access Point Name
PDN: Packet Delivery Network

Solution for providing IPv4 services over IPv6-only networks

One survey of IPv6 readiness in the Android Market showed approximately 85% of applications being IPv6-capable, while approximately 15% failed to work on an IPv6-only networks. Most of applications that failed are in the peer-to-peer communications space (Skype, Google Hangouts, Tango, ...)

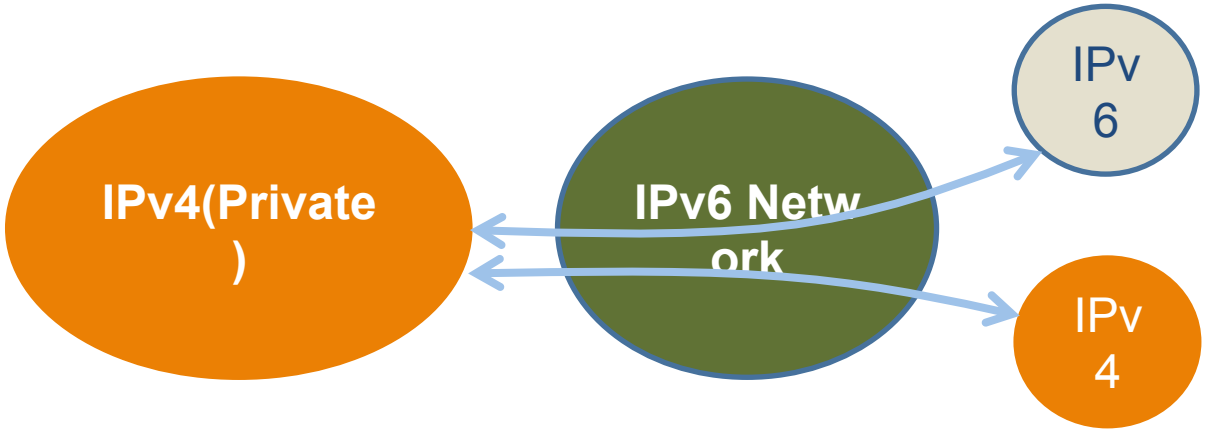
464XLAT: Combination of Stateful and Stateless Translation

draft-ietf-v6ops-464xlat-xx	RFC 6146 (Stateful NAT64)	RFC 6145 (IP/ICMP Translation Algorithm)
	IPv6 → IPv4[Public]	**IPv4[Private] → IPv6**

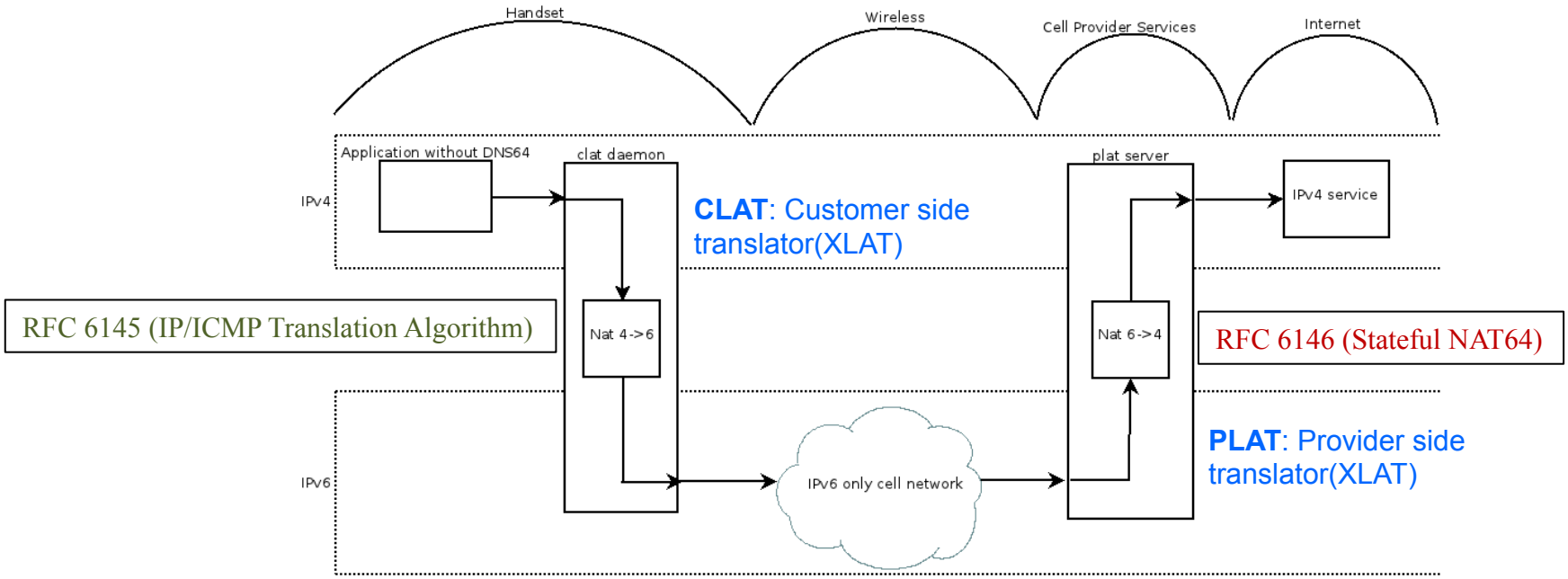
464XLAT system is reasonable because of

IPv6 service deployment in ISP Infra

IPv4 address exhaustion solution in device



464XLAT system



CLAT handles the translation of IPv4 to IPv6 for applications that do not support DNS64. CLAT is ne eded when transitioning to IPv6 on GSM networks using nat64 as the IPv4 access method. Android C LAT is the implementation of CLAT for the Android platform.

Less implications on the device itself because

- **IPv6 is a basic part of the device OS**
- **Not strictly limited to any device**

More implications on services/applications

- **Tightly coupling with service providers**
- **Closely working with application developers**

Thank you for your attention