

<Korea-EU ICT Forum>

Security Research in Future Internet

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School of EE
Seoul National University
Seung-Woo Seo

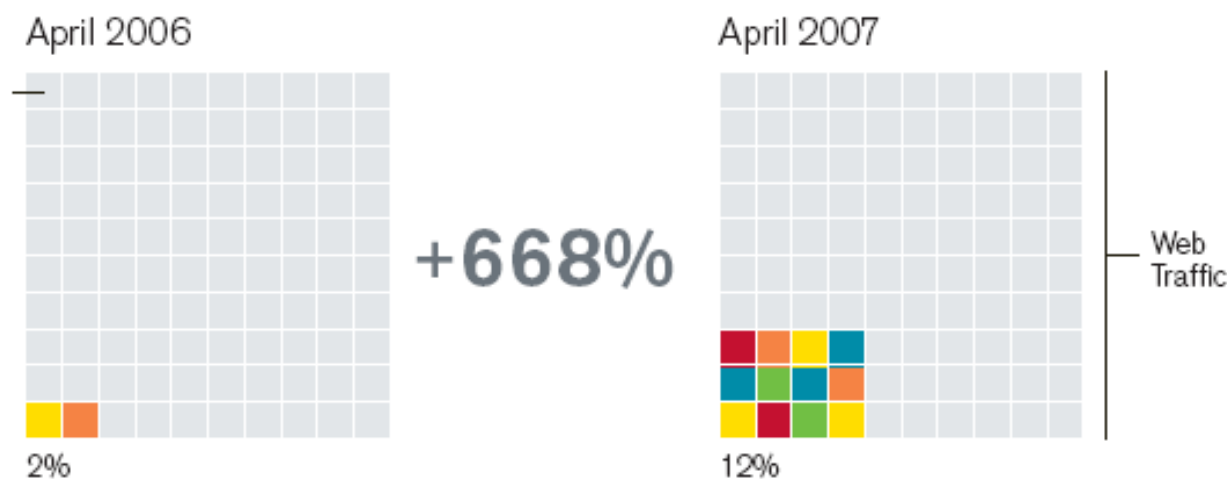


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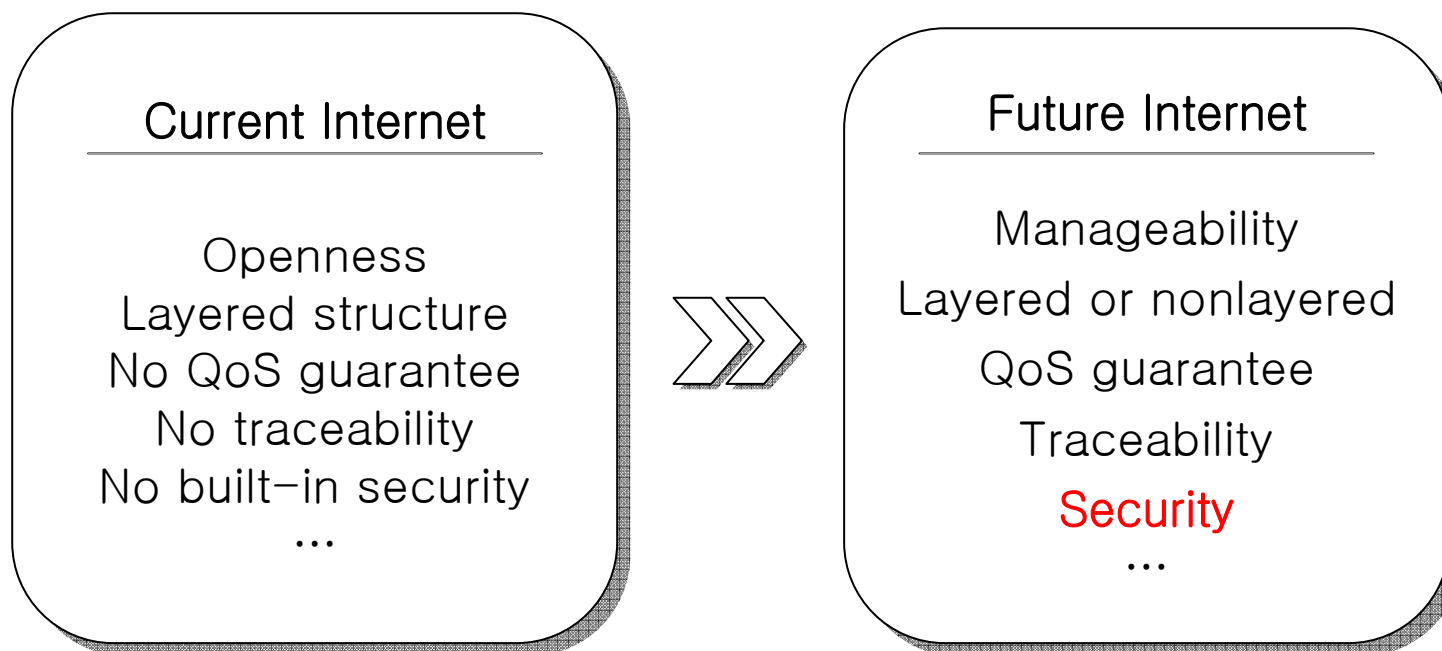
Status of Internet

- Driving engine for economy and social networking
 - In Korea, market size has grown up to \$5370Billion in 2006
 - Social networking traffic like CyWorld has increased up to 12% of total Web traffic in 2007 (BusinessWeek, 2007.6.)



- Very diverse requirements for Internet

Necessity of Future Internet

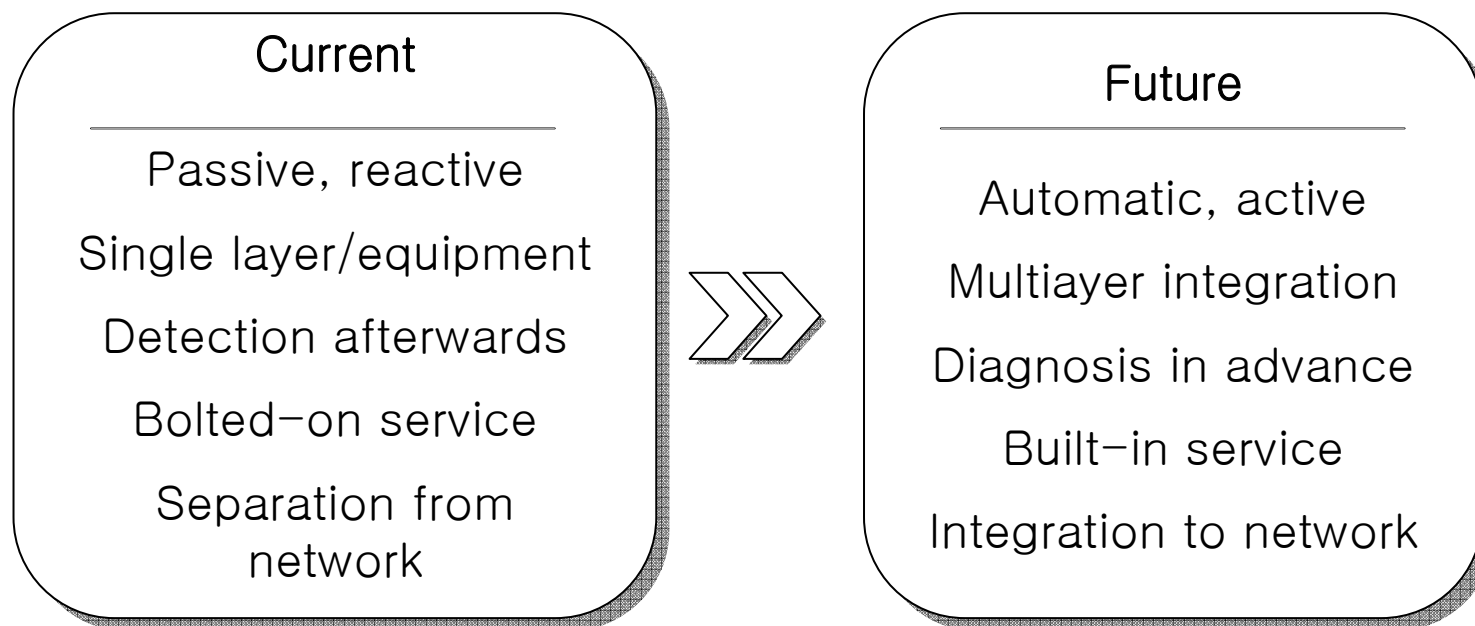


- Research on Future Internet under diverse requirements has just begun

Current Status of Internet Security

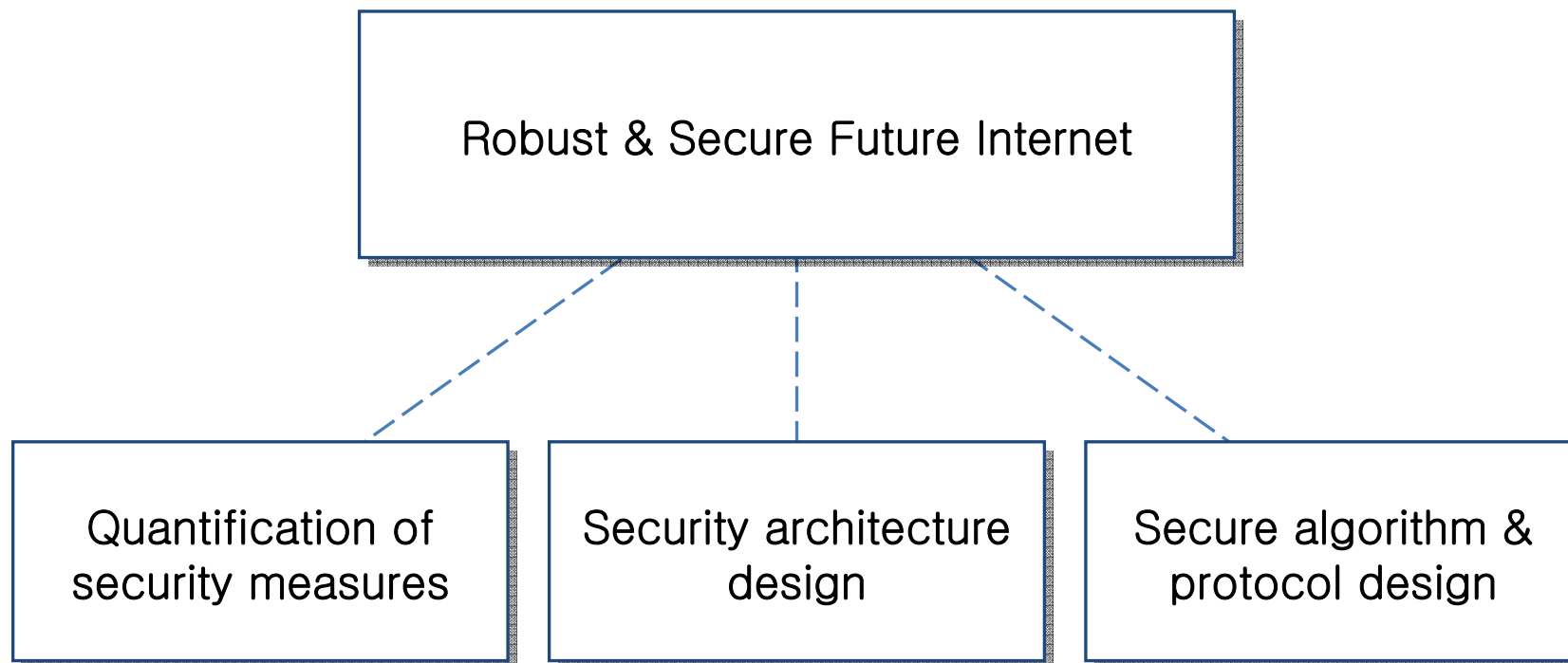
- Limitation on current security technology
 - Separation of security function from network
 - Independent deployment of virus vaccine, spam filter, IDS, Firewall, VPN, etc. in each layer and application whenever necessary
 - Passive detection and prevention
 - Passive reaction by relying on the decision of human
 - Long delay until action, which allows additional attacks
 - More importantly, integrated end-to-end security measures are not available
 - Local detection of worm, DDoS and Bot
 - Each domain has its own security measures
 - No correlation among security technologies
 - No integrated end-to-end security measures

Change of Security Paradigm

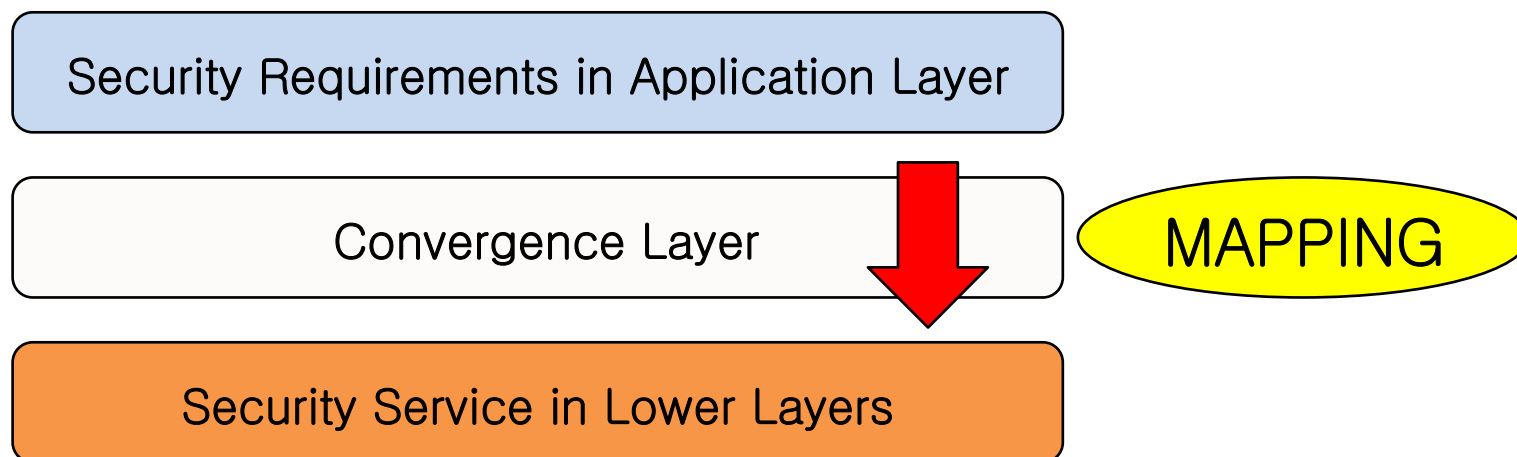


⇒ Security is no more an option, but a necessity that should be considered at the initial stage of network design.

Direction of Security Research for FI

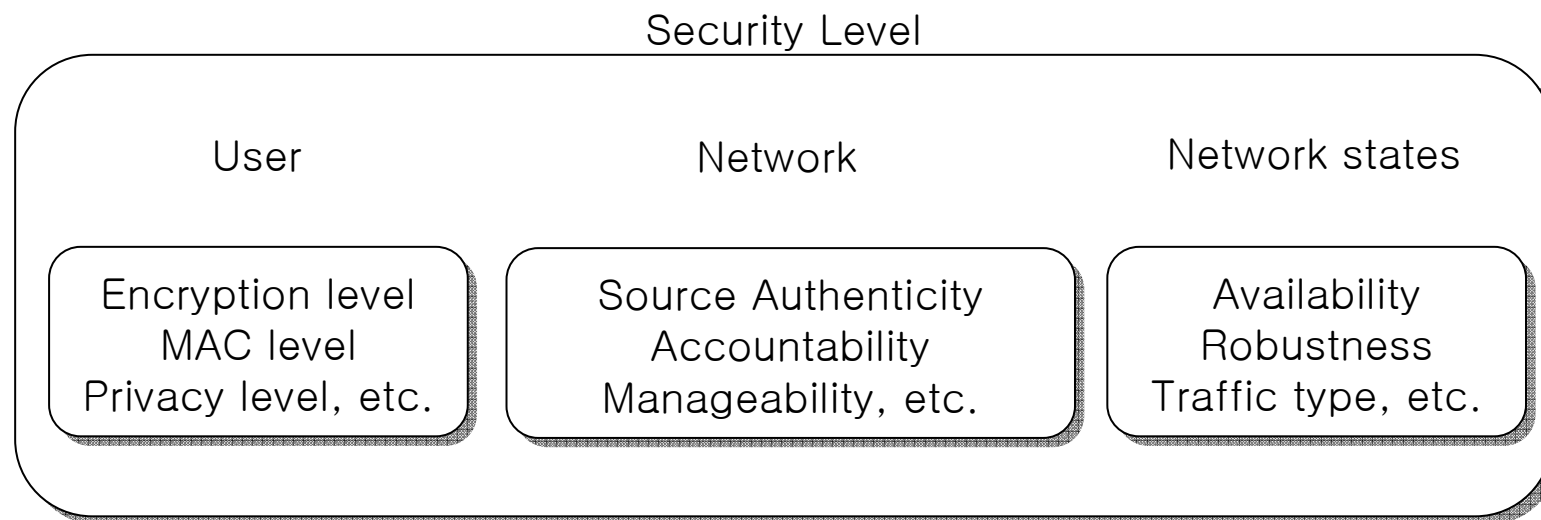


Mapping of Security Requirements



- Classification of security levels
 - Service profiling for security requirements
 - Classification and mapping to network configurations
- Network service
 - Secure and robust service in network layer which is resilient to external perturbation

Security Management



- Non-overlapped security service
- Configurability
- Balance between privacy and security
- Balance between availability and security
- Automated diagnosis (self-diagnosability)
- Security audit

Conclusions

Goal of Security Research:

Design of Security Architecture for Future Internet
with ~100% guarantee of C, I, A, and A

- The most fundamental prevention of network against security attack
- Desirable if self-restoration feature is incorporated
- Must develop efficient security policies for Future Internet