

**IPv6-Based 5G**  
**The Two-Way Internet**

**5G** **WORLD ALLIANCE**

**MOBILE WIRELESS**  
**INTERNET**



*Vision 2020*



# Wireless Generations

**1G**

**2G**

**3G**

**4G**

**5G**

**Non-IP**

**IPv4/NAT**

**IPv6**

?

**Analogue**

**GSM**

**WCDMA**

**OFDM**

**MIMO/mmWAVE**

**Voice**

**Voice**

**- WWW- C/Server**

**Streaming  
Media, P2P,..**

**9.6 Kbps**

**64 Kbps**

**2 Mbps**

**10 Mbps**

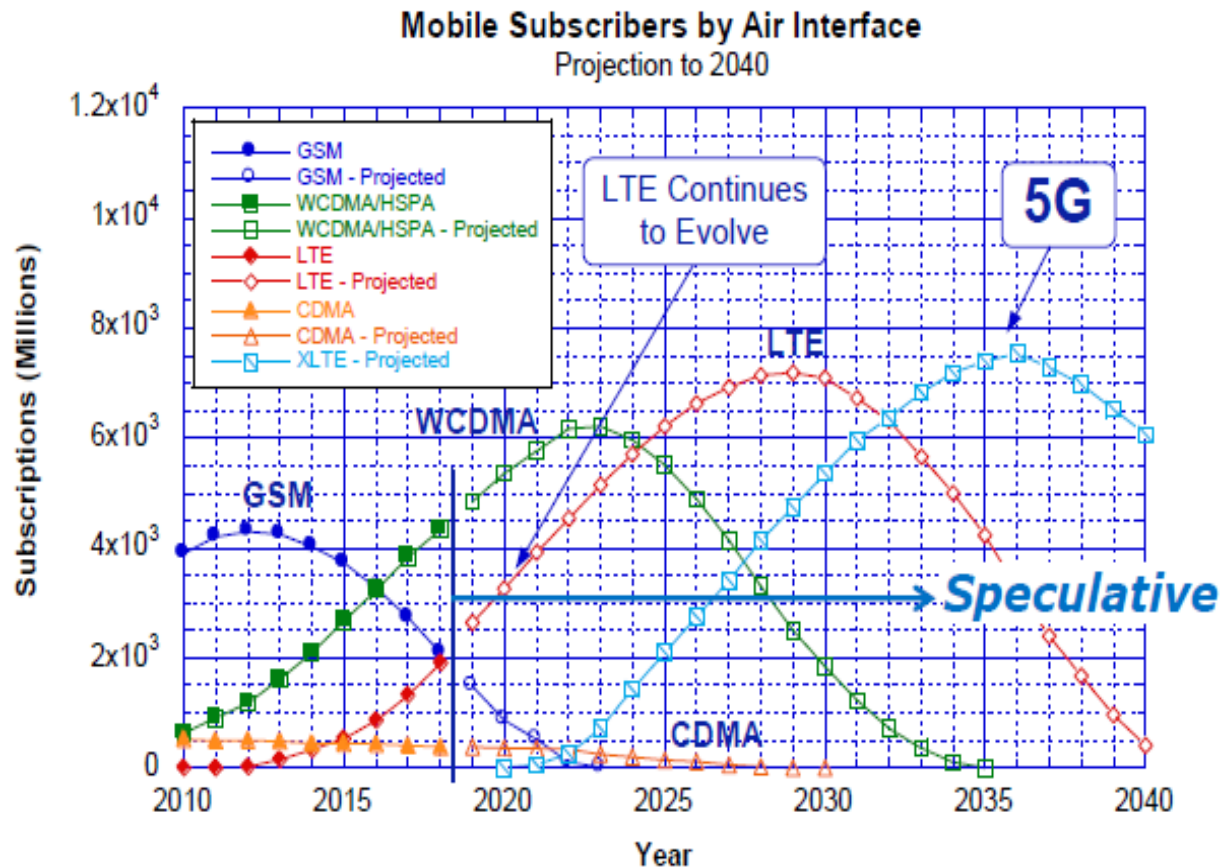
**1 Gbps +**

**Public Internet**

**Global Internet**

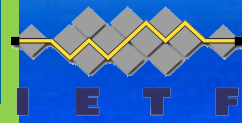
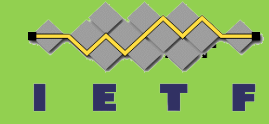
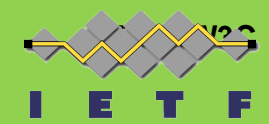
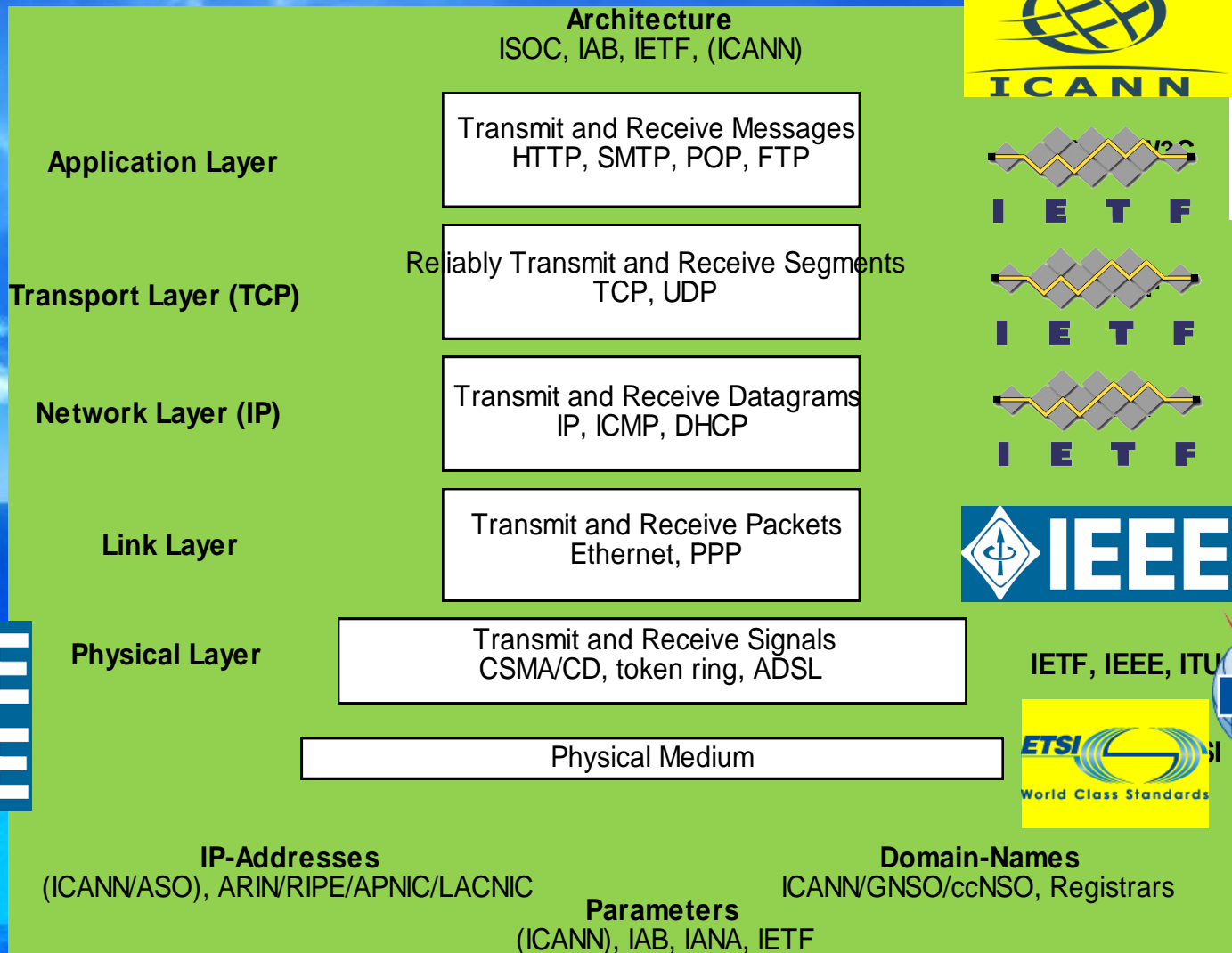
# 4G Systems Remain Significant in a 5G World

## Low Cost Markets and Legacy Infrastructure



[1] "Self-Organizing Networks (SON): Self-Planning, Self-Optimization and Self-Healing for GSM, UMTS and LTE", Hamied et. Al, 2012; [2] Strategy Analytics; [3] Ericsson and Cisco

# Internet Fragmented Governance



IETF, IEEE, ITU



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Version of Sep 2004





# 5G Network Evolution to Meet Expectations



Security

Management & Orchestration



OPEN NETWORKING  
FOUNDATION

Flexibility

Applications

Radio  
Access

Cloud Infrastructure



openstack

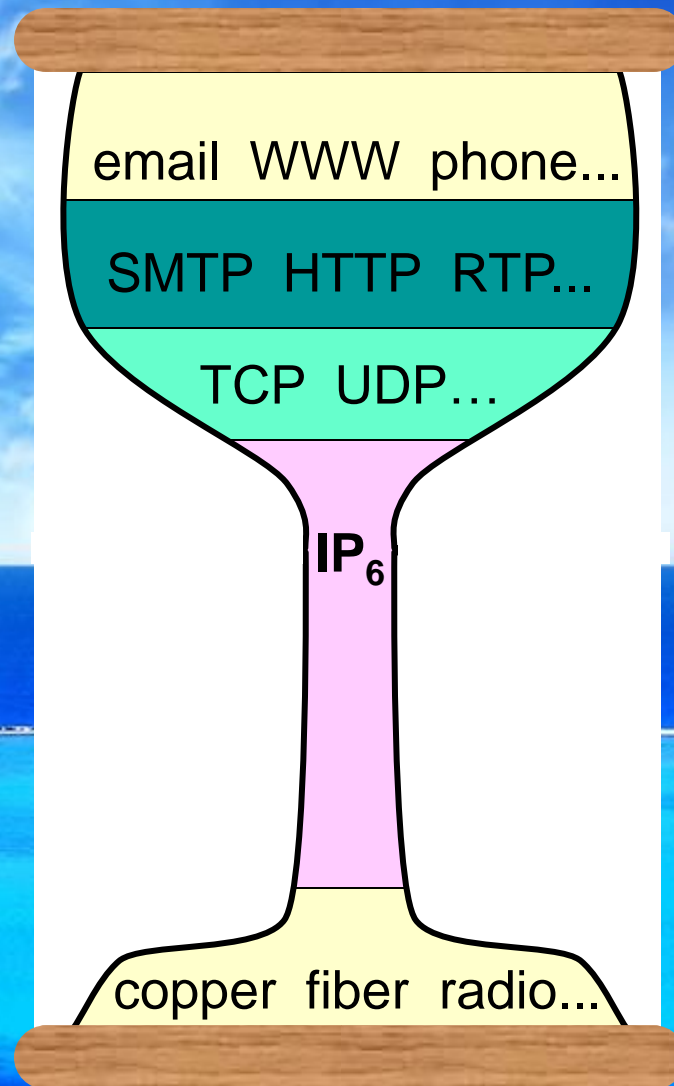
Robustness

IP Infrastructure



Energy  
Efficiency

# A Fitness Goal



- perhaps we can trim down from an hourglass to a *wineglass*
- promising signs: IP-over-WDM, IP-over-5G
- IPv6 to restore simplicity *and* functionality

Only  
Time Will  
Tell...

