

Business Models in Future Internet

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Contents

- Internet as a Business Infrastructure
- Business Paradigm Shift in Future Internet
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Internet as a Biz Infrastructure

Diverse Business Players in the Internet

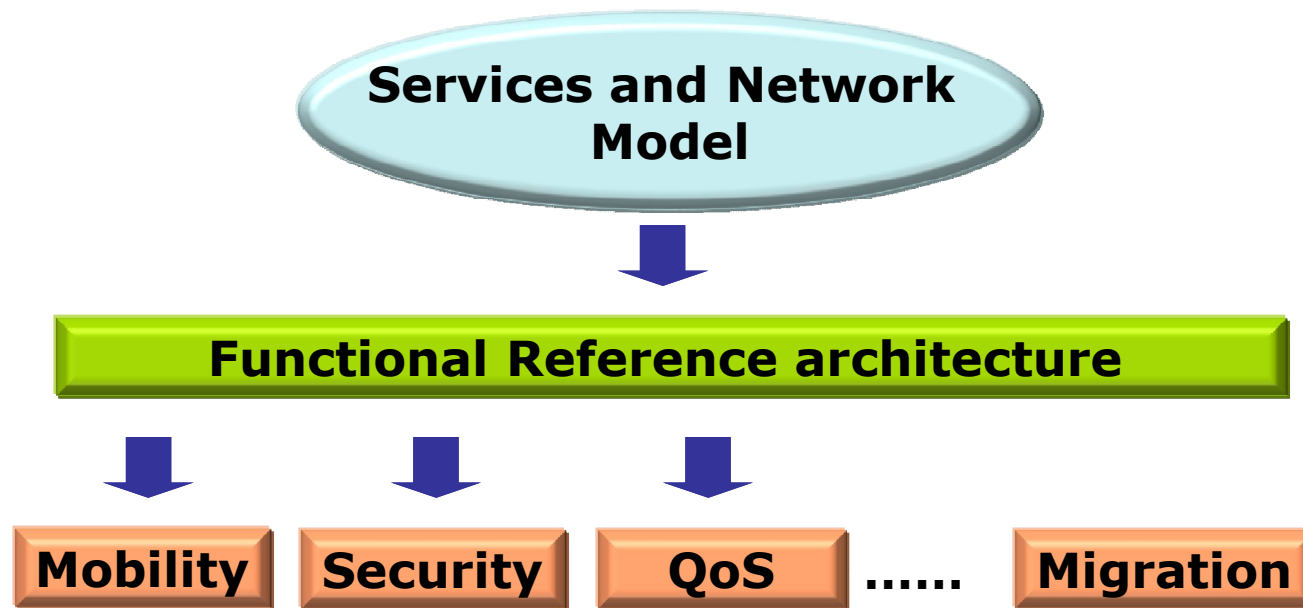
- Network Providers
- Application Services Providers
- Content Providers
- IPR Holders
- Users
- Governments
- ...



More and more
Business Models
are emerging
and Tussles over
Business Models

Future Internet Approaches

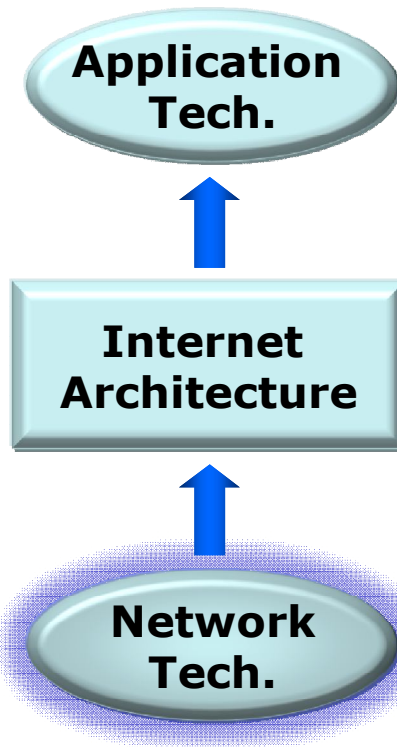
- Future Internet Technology is derived by Commercial Market and Service/Business Models



"Building Block Approach for Architectures of Future Network"
(Source: ISO/IEC JTC 1/SC 6)

Current Internet vs. Future Internet

Current Internet



**Technology-Driven
Computer Networking**

End to End

Interconnection
Network

Internetworking
Protocol (IP)

Transparency



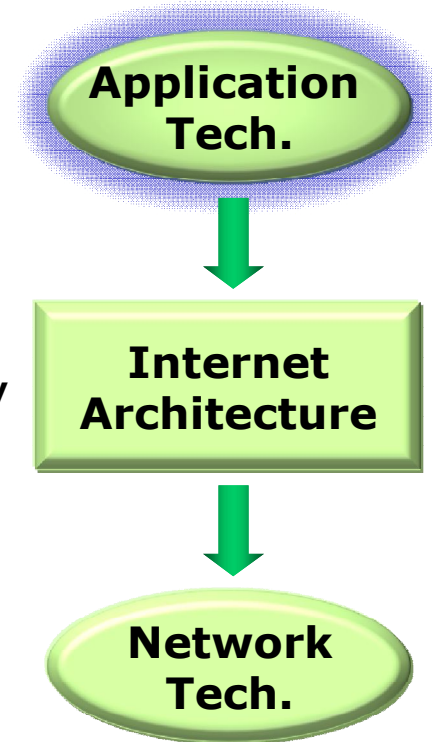
NW of NWs

Federation

Programmability

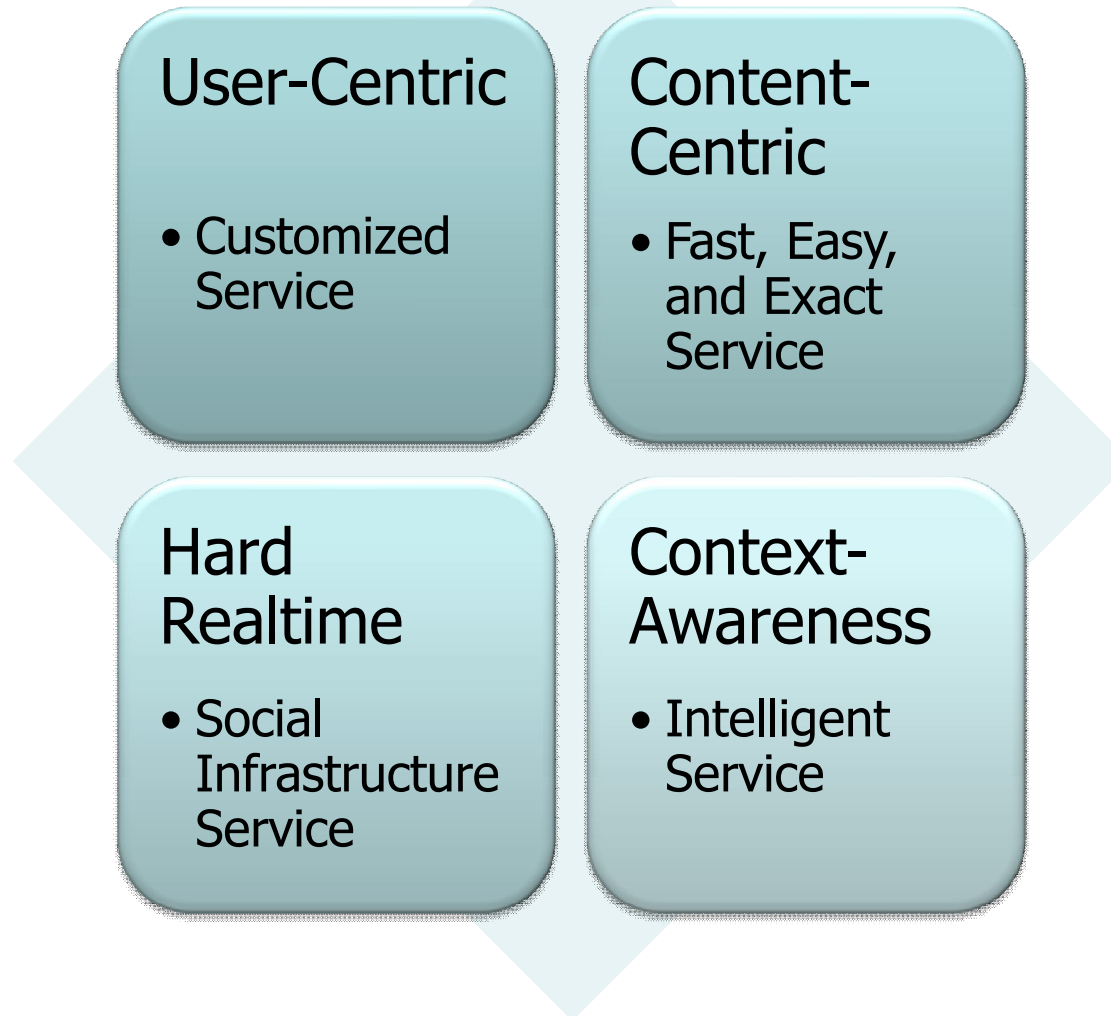
Virtualization

Future Internet

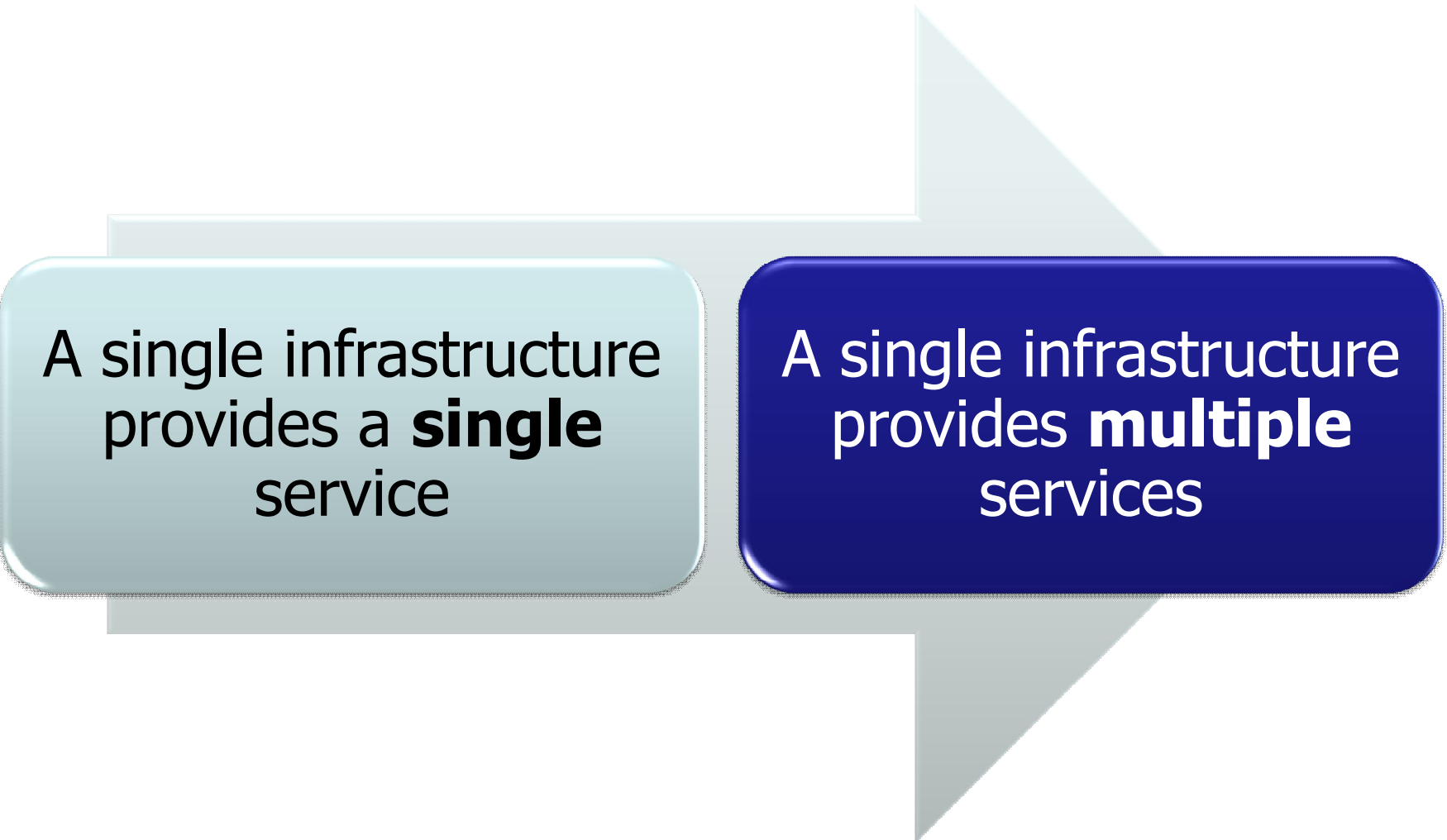


**Commercial Market-Driven
Networked Computing**

What Future Internet Services Look Like?



Paradigm Shift



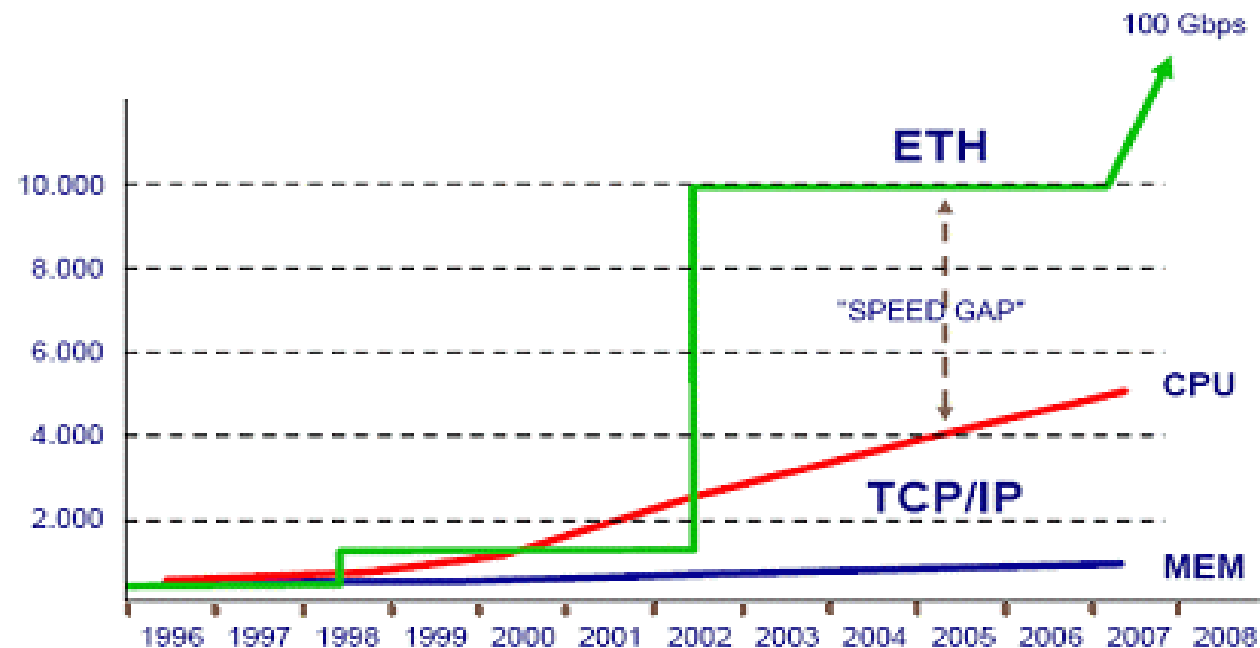
A single infrastructure
provides a **single**
service

A single infrastructure
provides **multiple**
services

Paradigm Shift Factors

- Speed Gap Between Computers and Networks

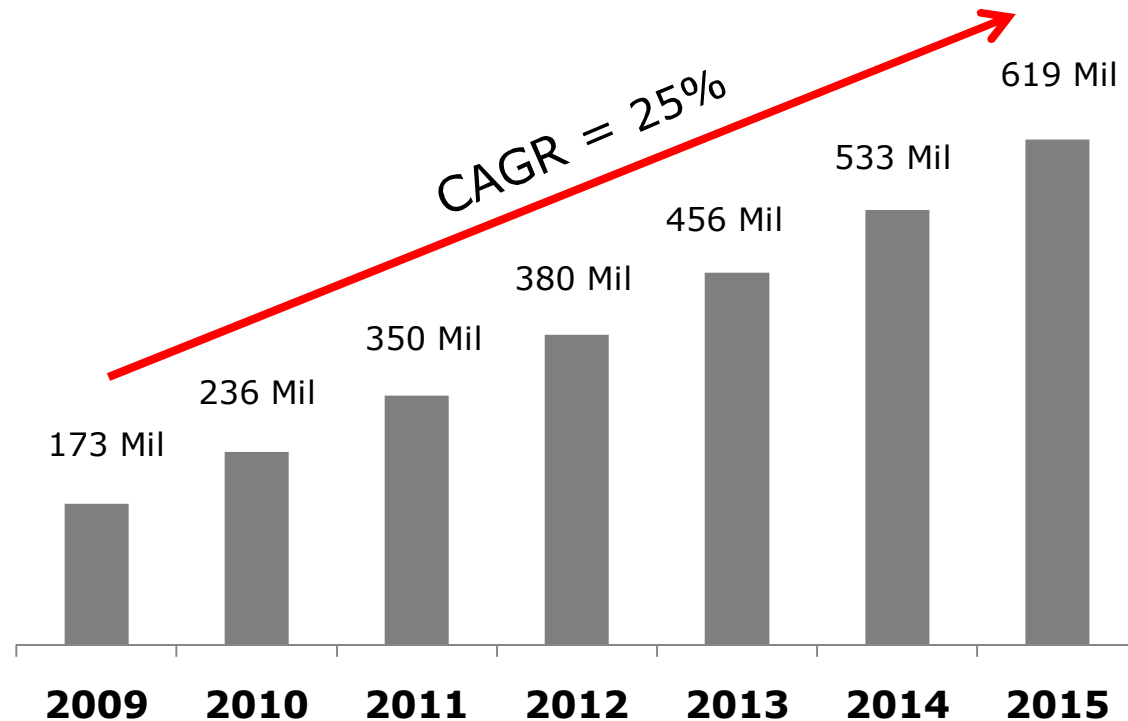
The speed gap: what happens with memory & CPU (Software)



Source: J. Barroso (2006)

Paradigm Shift Factors

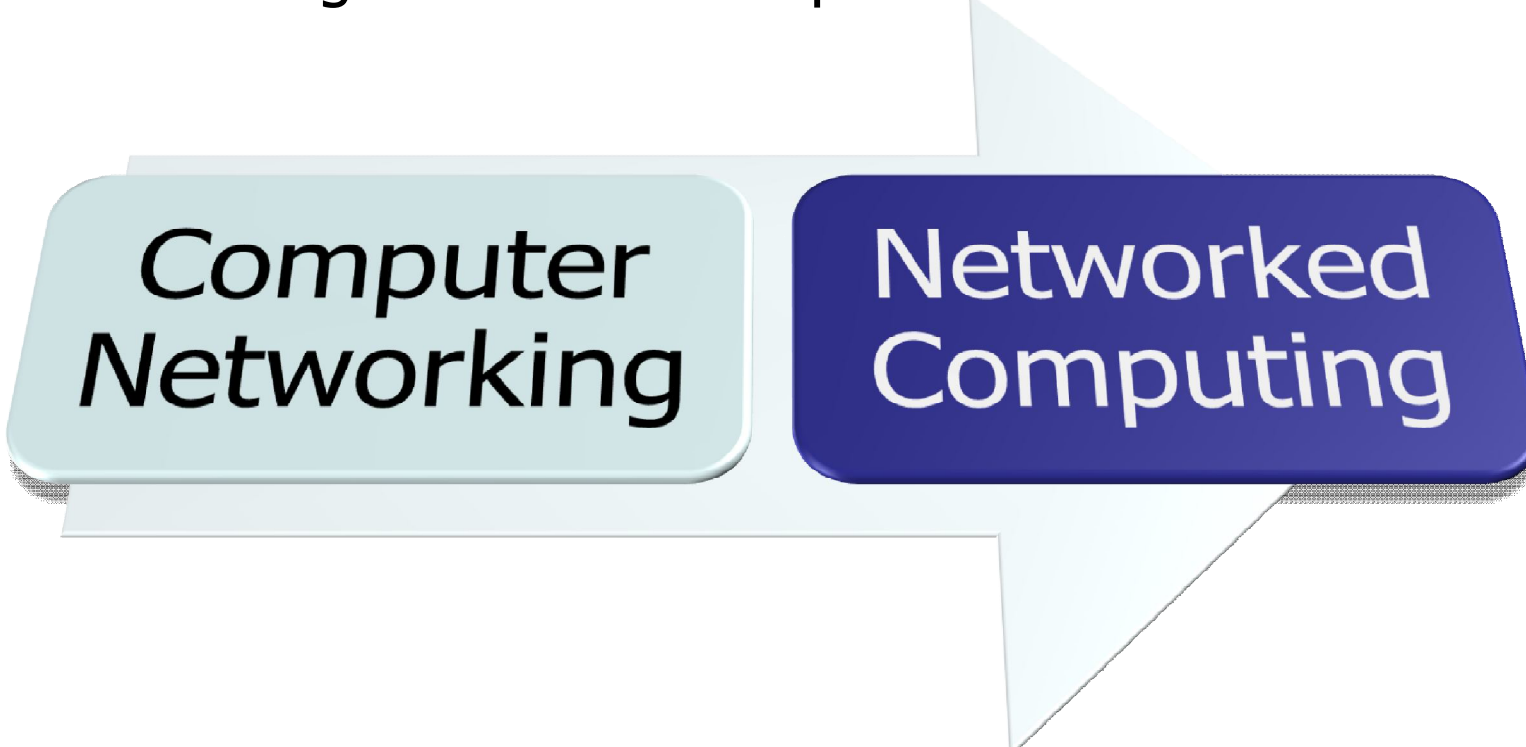
- Growing Smart-Phone Market



(Source : Koda Research Consultancy, 2010/05)

Paradigm Shift

- Service Resources are mixed & embedded inside Networks
 - Reversing the role of Computers and Networks



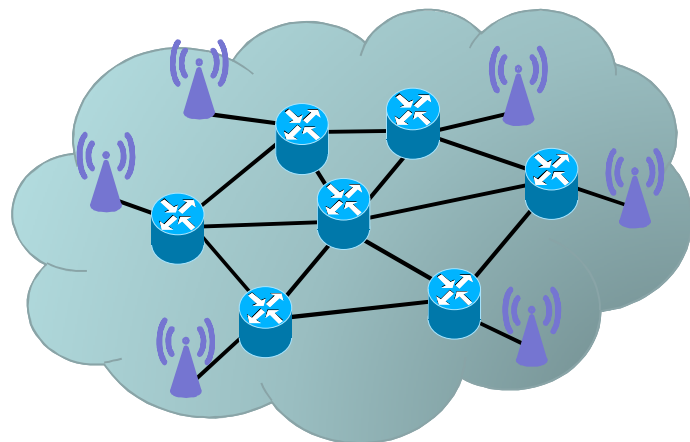
The diagram consists of two rounded rectangular boxes connected by a large, light blue arrow pointing from left to right. The left box is light blue and contains the text 'Computer Networking'. The right box is dark blue and contains the text 'Networked Computing'. The arrow indicates a transition or shift from the left state to the right state.

**Computer
Networking**

**Networked
Computing**

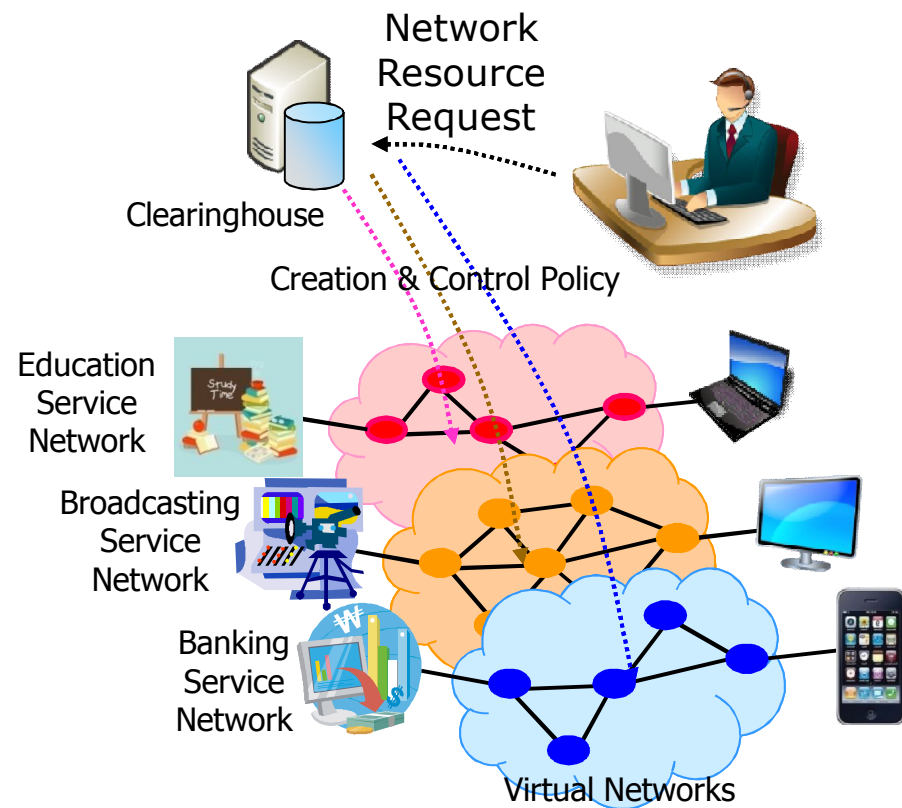
Paradigm Shift

Ossified Network



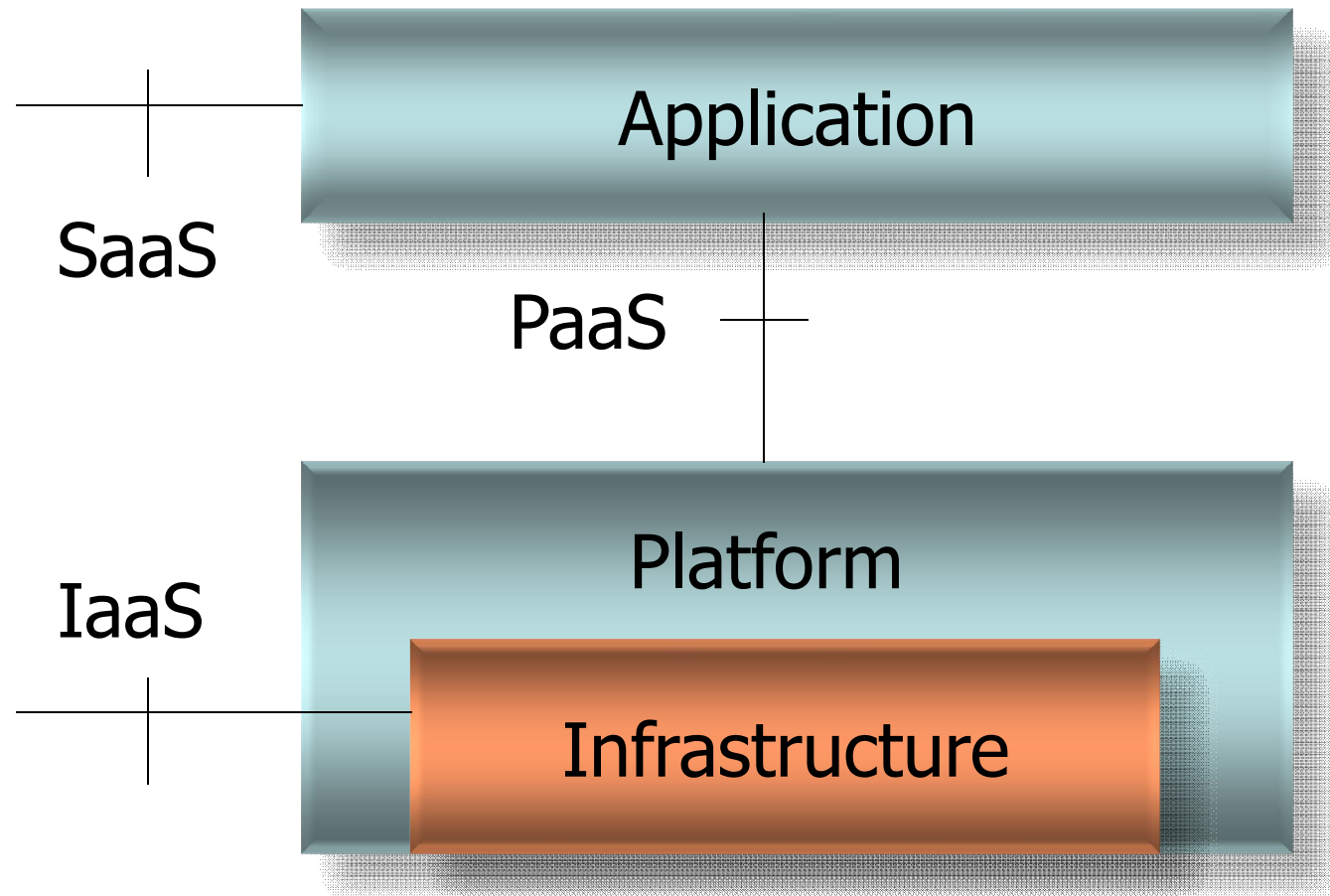
Physical Network

Programmable Network

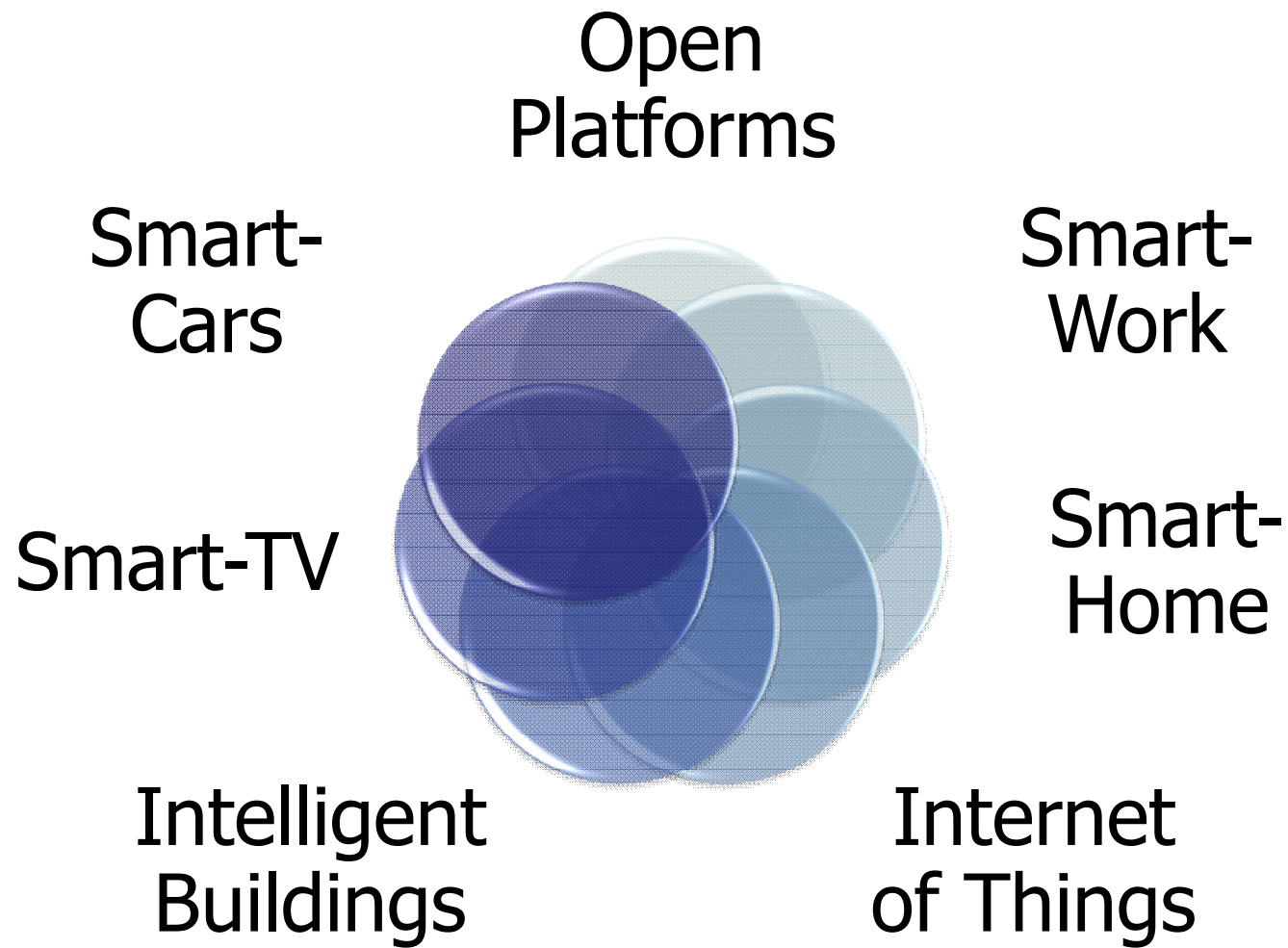


Future Internet provides Programmability with Virtualized network/computing/storage Resources for Service Networking

Biz Models in Future Internet

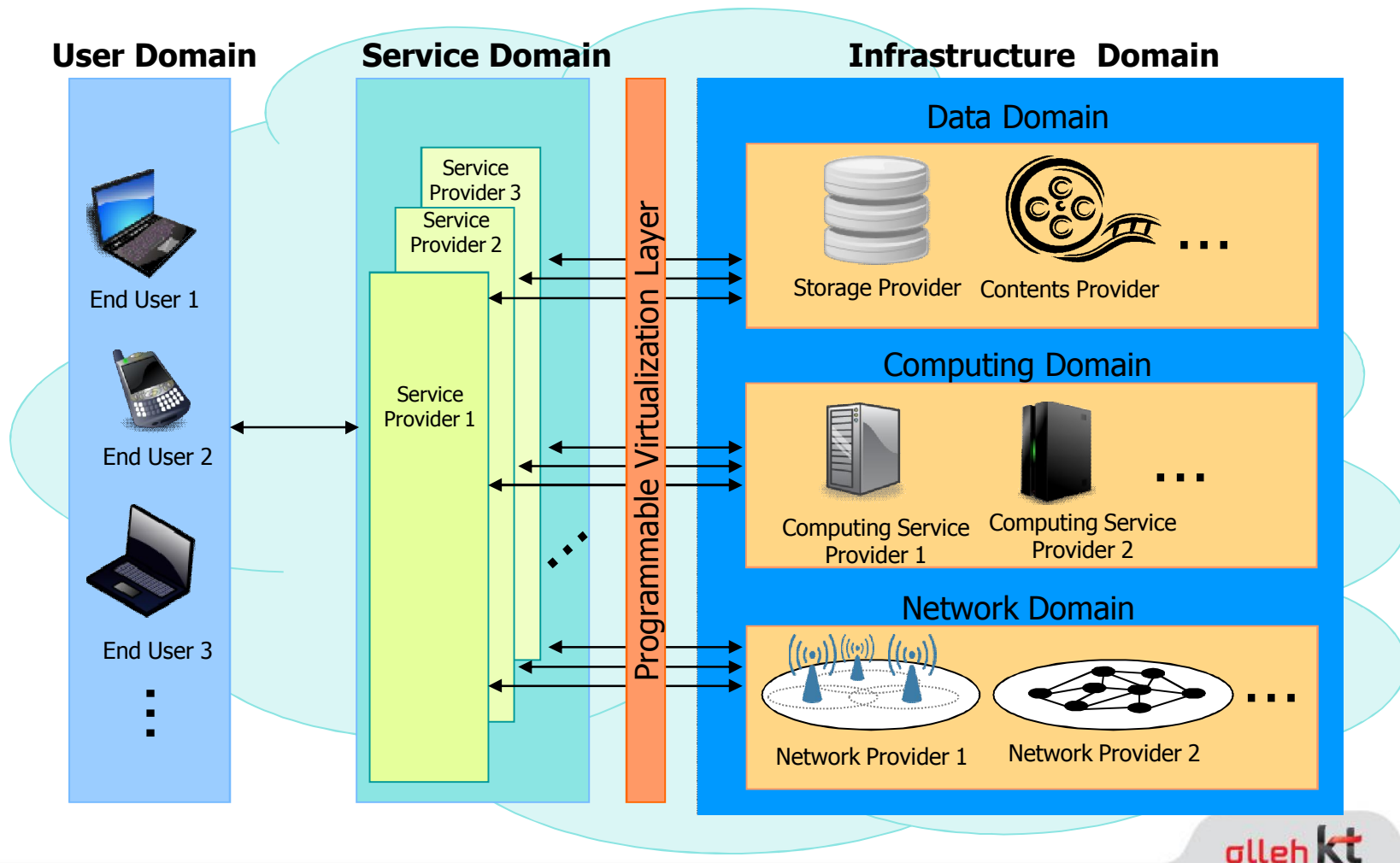


Case of Biz Models



Case of Open Ecosystem

- Future Internet as the solution for the tussles over the Internet Biz Models
 - Technically guarantees proper economic incentives according to each contribution



Conclusion

Past

- Non-interference Business

Present

- Competitive Business

Future

- New Paradigm Business of **Ecosystem**

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