

Standardization & Research View for Managing Clouds and Smart Networks Services and Resources

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A Few Recent News Articles on Cloud Services



개인용 클라우드시장 '불꽃 경쟁'

헤럴드경제 | 입력 2011.07.07 13:36 | 누가 봤을까? [40대 남성, 서울](#)

애플 아이클라우드
가을부터 무료서비스

美 아마존 서버 통해
삼성도 3분기 선보일듯

SKT·KT·LGU+ 등도
데이터센터 확충 추진

Personal Cloud Hot
Competition ahead

- Apple's iCloud
- Samsung's personal
- Cloud based on EC2
- SKT, KT, LGU+
- Introduce theirs

[4GLTE시대 이달 개막] 개인용 클라우드 서비스로 승부

■ 선진 통신사업자 사업전략은
차별화된 앱 사전 탑재 등 멀티미디어 동영상 서비스
데이터 트래픽 화두로 부상... 무제한 요금제 사실상 폐지

김정곤기자 mckids@sed.co.kr

입력시간 : 2011.09.20 17:39:09 수정시간 : 2011.09.20 17:39:09

● 국내외 데이터 무제한 요금제 현황

구분	폐지	유지
미국	버라이즌, AT&T, T모바일	스프린트넥스텔
한국	LTE요금제서는 없어질듯	SKT, KT, LG유플러스

※자료:외신 및 국내 각 업체

Personal Cloud as
Major 4GLTE BM

SP's unlimited data
Services will end soon

Cloud Management: Commercial Solutions

- Network World's 10 Cloud Management Companies to watch
- JamCraker: <http://www.jamcracker.com/>
 - cloud services delivery and **life-cycle management**
- Jitterbit: <http://www.jitterbit.com/>
 - Heterogeneous **Data Integration**
- Nettuitive: <http://www.nettuitive.com/>
 - **predictive analytics** platform for physical, virtual and cloud infrastructure
- Alfabet: <http://www.alfabet.com/>
 - integrated **IT planning and business IT management**
- Apica: <http://www.apicasystem.com/>
 - a suite of **load testing and performance monitoring** tools for **cloud applications**
- Embotics: <http://www.embotics.com>
 - **private cloud management**
- New Relic:
 - **application performance management** SaaS, with real user monitoring
- Opscode: <http://www.opscode.com/>
 - open-source systems integration framework built specifically for **automating the cloud**
- Strangeloop: <http://www.strangeloopnetworks.com/>
 - scalable, on-demand **optimization** for cloud-based Web sites
- UptimeCloud: <http://www.uptimecloud.com>
 - **cloud cost and capacity management** SaaS

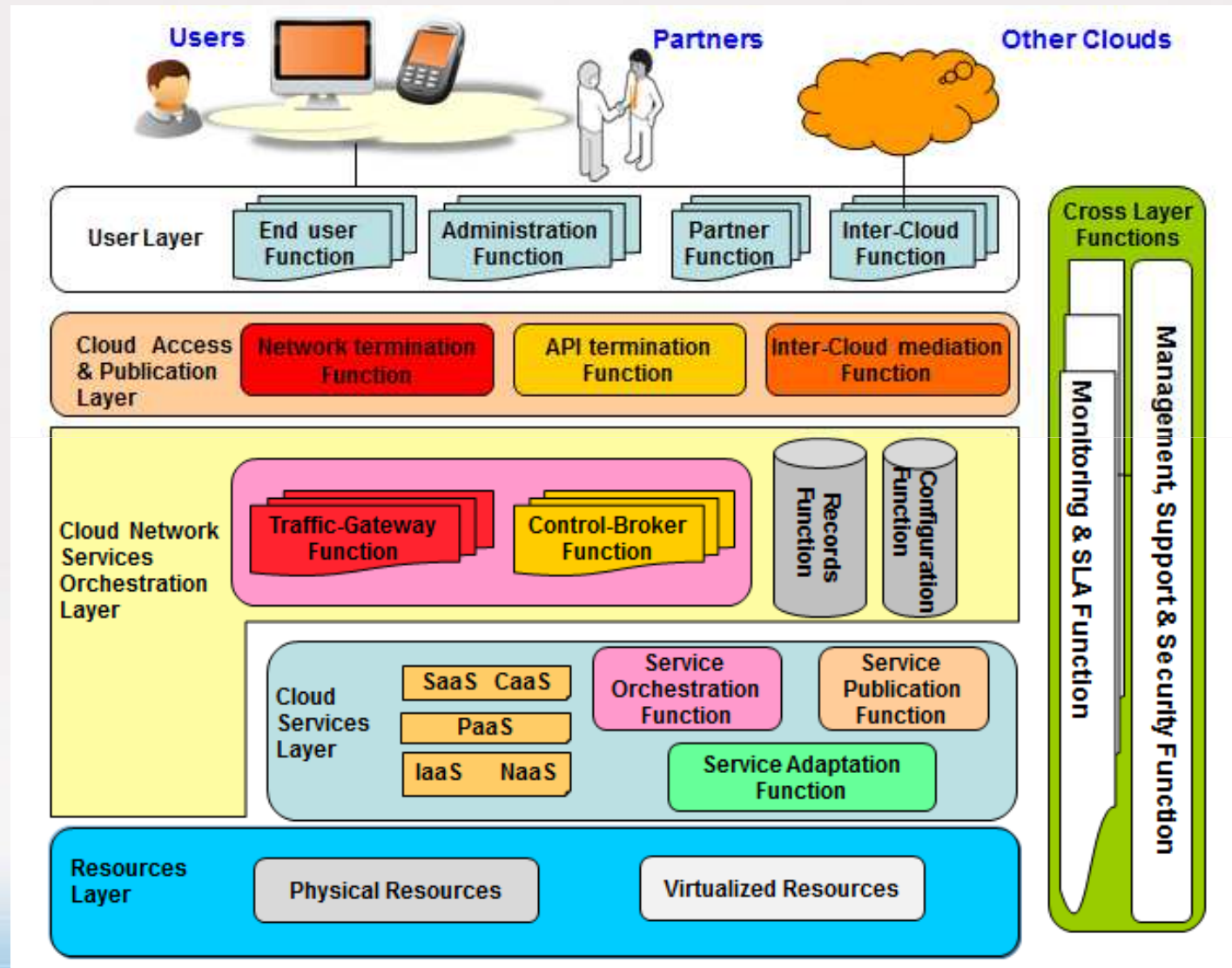
Cloud Management: Research

- Intra-Cloud Environment
 - Data Center L2 switching optimization
 - Scalability and Performance solutions
 - SEATTLE, VL2, ARMD, etc.
- Inter-Cloud Environment
 - Future Internet FIND Project: NEBULA
 - Protocol & Mechanisms for Secure and high-quality cloud traffic transfer between DCs
 - NICT inter-cloud projects
- Cross Stratum Optimization
 - QoS/QoE guarantee by cooperation between application and network stratum
 - Aim to define control/management interfaces and functional capabilities to meet objectives
 - Currently working on establishing IRTF CSO Research Group
- Resource Allocation Optimization
 - Cloud service (especially IaaS) user's requests optimal mapping into physical substrate
 - From Simple CPU, Memory, bandwidth mapping to more complex case with QoS requirements
- Management Automation
 - Enable autonomic computing in Cloud environment

Cloud Management: Standardization

- DMTF (Distributed Management Task Force)
 - Open Virtualization Format (OVF)
 - DMTF Open Cloud Standards Incubator was started in 2009
 - Cloud Management Working Group (CMWG) Now
 - Working Scope: policy, SLAs, QoS, provisioning, and monitoring
 - Two Output documents so far:
 - Architecture for Managing Clouds(DSP-IS0102)
 - Use Cases and Interactions for Managing Clouds (DSP-IS0103)
- OGF (Open Grid Form)
 - The Open Cloud Computing Interface working group (OCCI-WG) of the OGF was established in 2009
 - Output document
 - Open Cloud Computing Interface - Use cases and requirements for a Cloud API(GFD-I.162)
- SNIA (Storage Networking Industry Association)
 - Storage Management Initiative Specification (SMI-S)
 - Cloud Data Management Interface (CDMI)
- ITU-T SG13/Q.4
 - draft Recommendation on resource control and management for virtual networks for cloud services (Y.VNC)
- IEEE
 - Data center L2 protocols
- Open Networking Foundation (ONF)
 - Open flow and SDN for Data Center
- ETSI AFI ISG (Autonomic network engineering for the self-managing Future Internet (AFI))
 - GANA (Generic Autonomic Networking Architecture)
- Global Inter-Cloud Technology Forum

Cloud Computing Functional Reference Arch

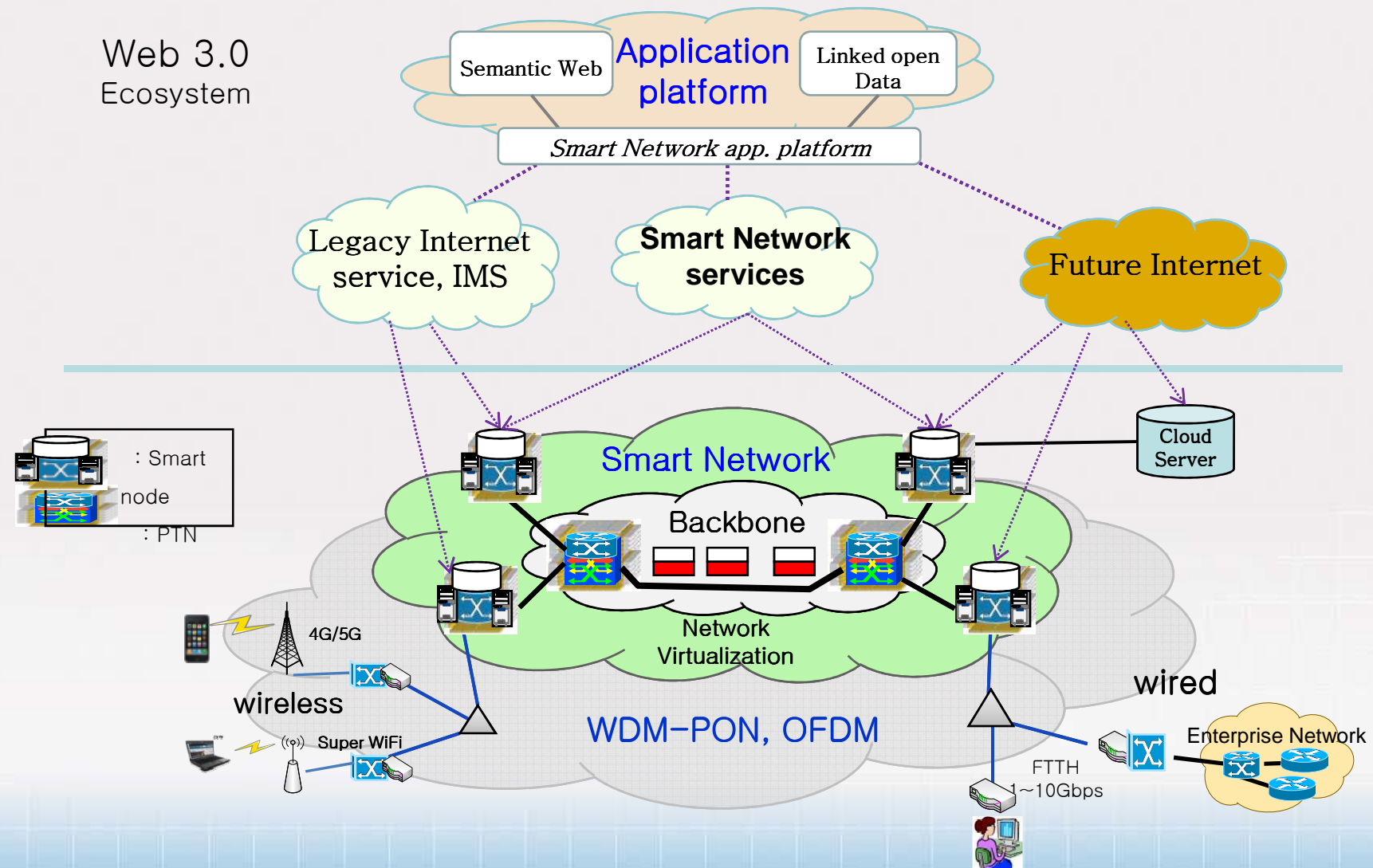


Source: ITU-T FG-Cloud FuncArch Draft

Smart Ubiquitous Networks: Definition by ITU-T SG13

- Smart ubiquitous networks are networks that can provide a wide range of existing and emerging services to people and things. The services provided by the networks are beyond transport and can cover aspects such as control, processing and storage. The networks are **smart** in the sense that they are knowledgeable, context-aware, adaptable, autonomous, and can affect services effectively and securely. The networks are **ubiquitous** in the sense that they allow access anytime anywhere through varied access technologies, access devices, and human-machine interfaces.

Smart Networks: Conceptual Architecture



SN Management: Research & Standardization

- Smart Node
 - KCC funded R&D projects initiated recently
- Smart Networks
 - ALTO, CSO, etc.
 - ALTO is standardization stage
 - CSO is still pre-standardization and more or less research stage
 - SDN
 - CCN/ICN (Contents/Information-Centric Networking)
- ITU-T SG13 SUN (Smart Ubiquitous Networks)
 - Requirements collecting stage
 - Several brainstorming meetings

Summary

■ Research

- Major research topics are focused on Quality & Resource optimization and Trustworthiness

■ Standardization

- Active standardization on the matured area of Cloud Computing
- Pre-standardization on the Quality & Scalability Optimization

■ Clean-slate Approaches

- Revolutionary approaches for paradigm shift like Openflow, CCN, NUBULA

T h a n k
Y o u

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