



# **ITU-D Regional Development Forum for the Asia Pacific Region**

**“NGN and Broadband, Opportunities and Challenges”  
Yogyakarta, Indonesia, 27 – 29 July 2009**

## **Identity Management as An Application Enabler**

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# Outline

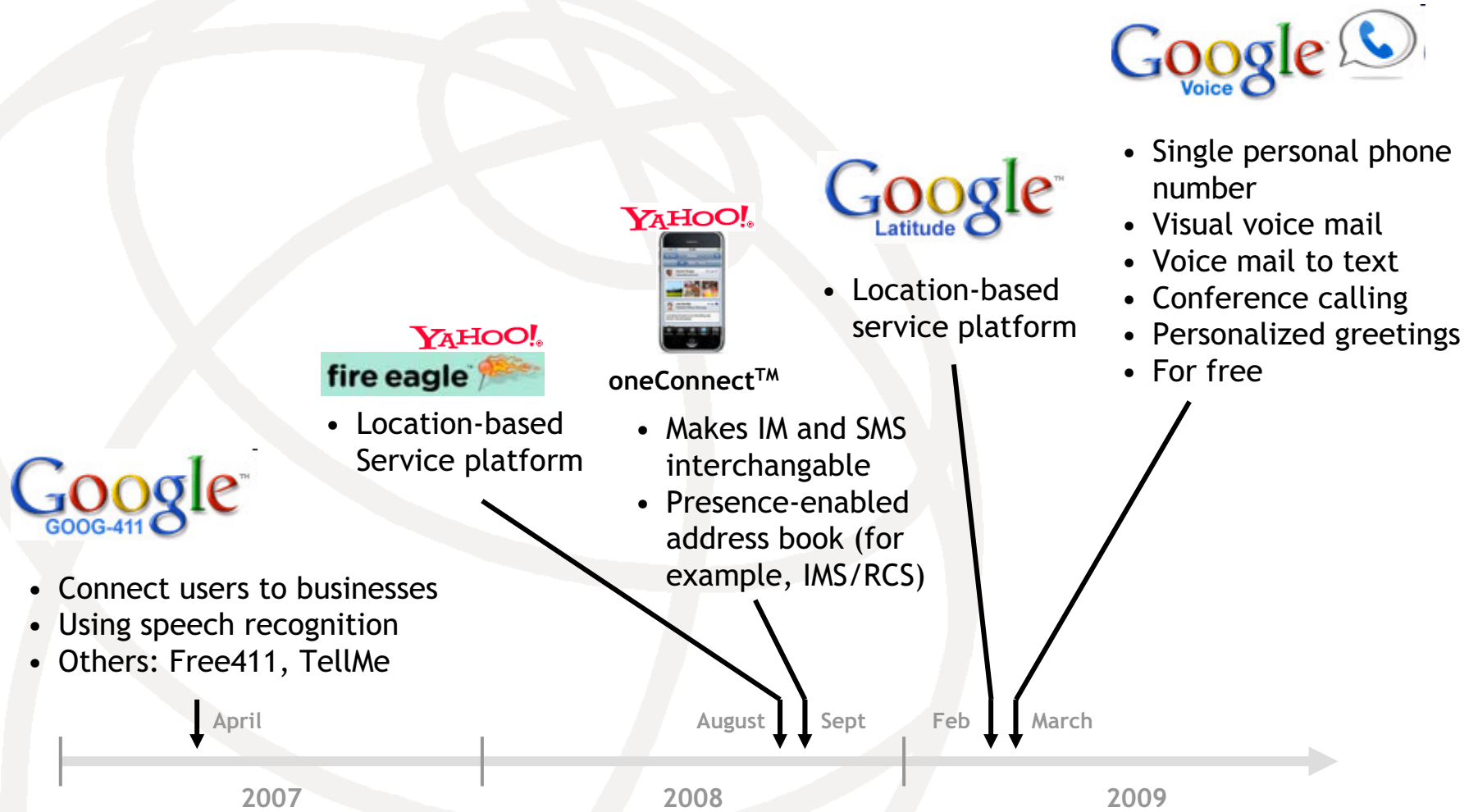
- Identity Management as an Application Enabler
- Definition & Standardization Status
  - ⇒ Standardization of the new services in Question 16
  - ⇒ Questions that Question 16 of SG 13 studies
  - ⇒ Collaboration on IdM and security with other Standards Development Organizations (SDO)
- New Business Models and Use Cases
- Key Take Aways



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# **Section 1: Identity Management as an Application Enabler**

# Internet companies are creating increasingly complex offers



Web offers are rapidly getting richer

# Relationship between Internet and network-based service providers



Service is about experience



Service is about access and connection



The current business model is unstable

# Enabling a trusted web experience



## OPEN INNOVATION

- *Ecosystem*
- *App developers*
- *New services*



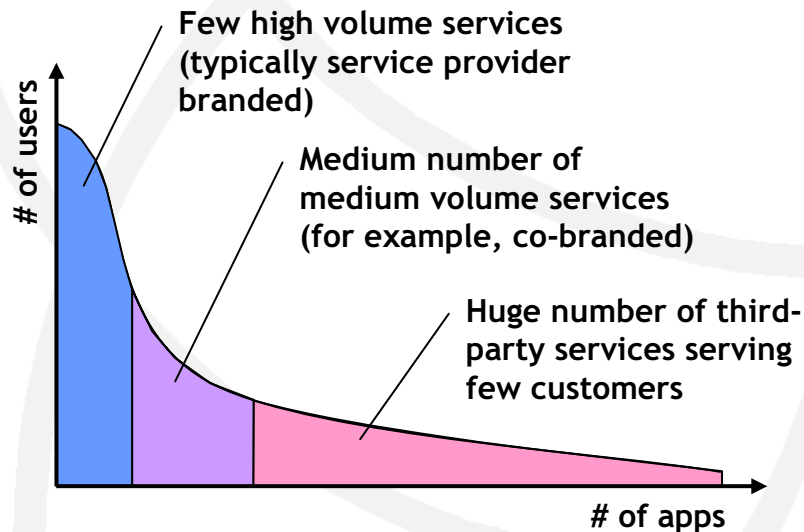
**Better Experience  
= More Customers**

## TRUST

- *Security*
- *Reliability*
- *Billing*
- *Privacy*



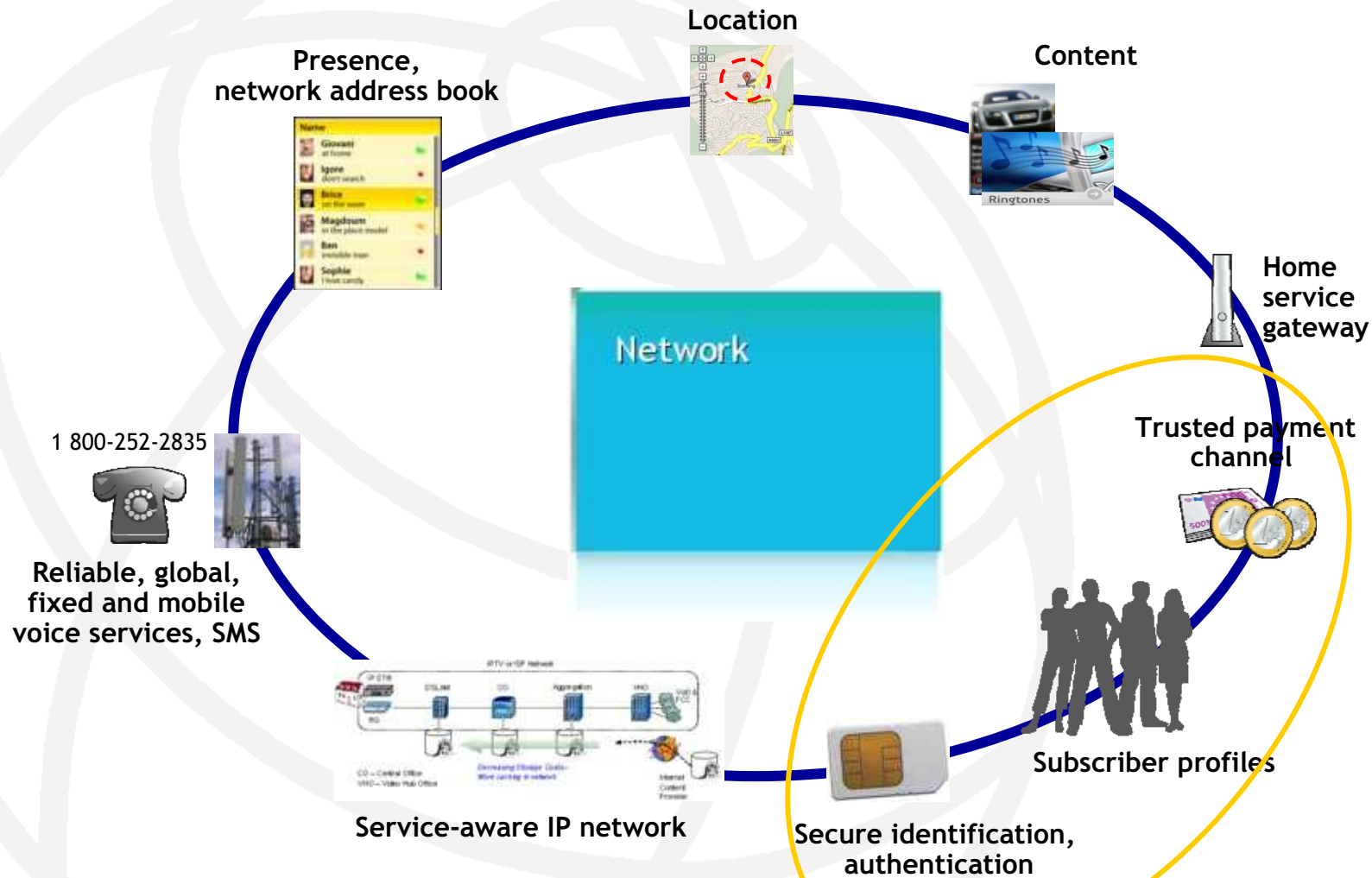
# The full scope of service innovation



- Enabled by an open mesh structure of application/content providers, service providers and developers

Result: Internet scale for telco innovation

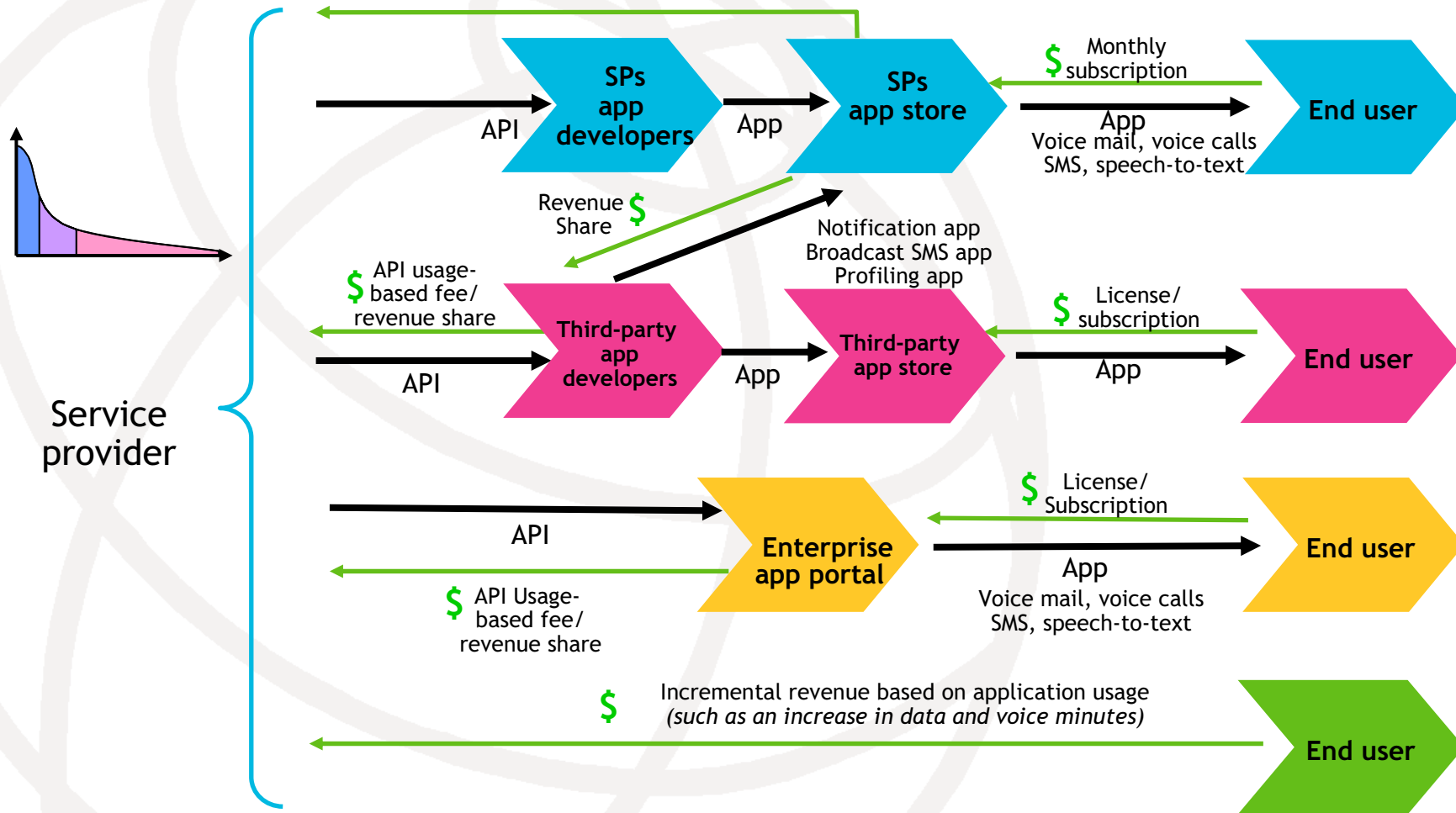
# Service providers own assets to enhance end-user applications





# Zoom-in: Service provider API/asset base monetization flow

- #1. Capture increased share of content and application revenues (spend) through direct and indirect users
- #2. Increase demand for SP-branded applications and data usage/access





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## **Section 2: Identity Management Definition and Standardization**

# Security and Identity Management work in ITU-T Study Group 13 (SG 13)

ITU-T SG 13 (Future networks including mobile and NGN ) is an ITU-T Lead Study Group

- For future networks and NGN
- On mobility management and fixed-mobile convergence

Within SG 13 Working Party 4 (QoS and Security) leads standardization on security and IdM

## Structure of the Working Party 4 of SG 13 (WP 4/13)

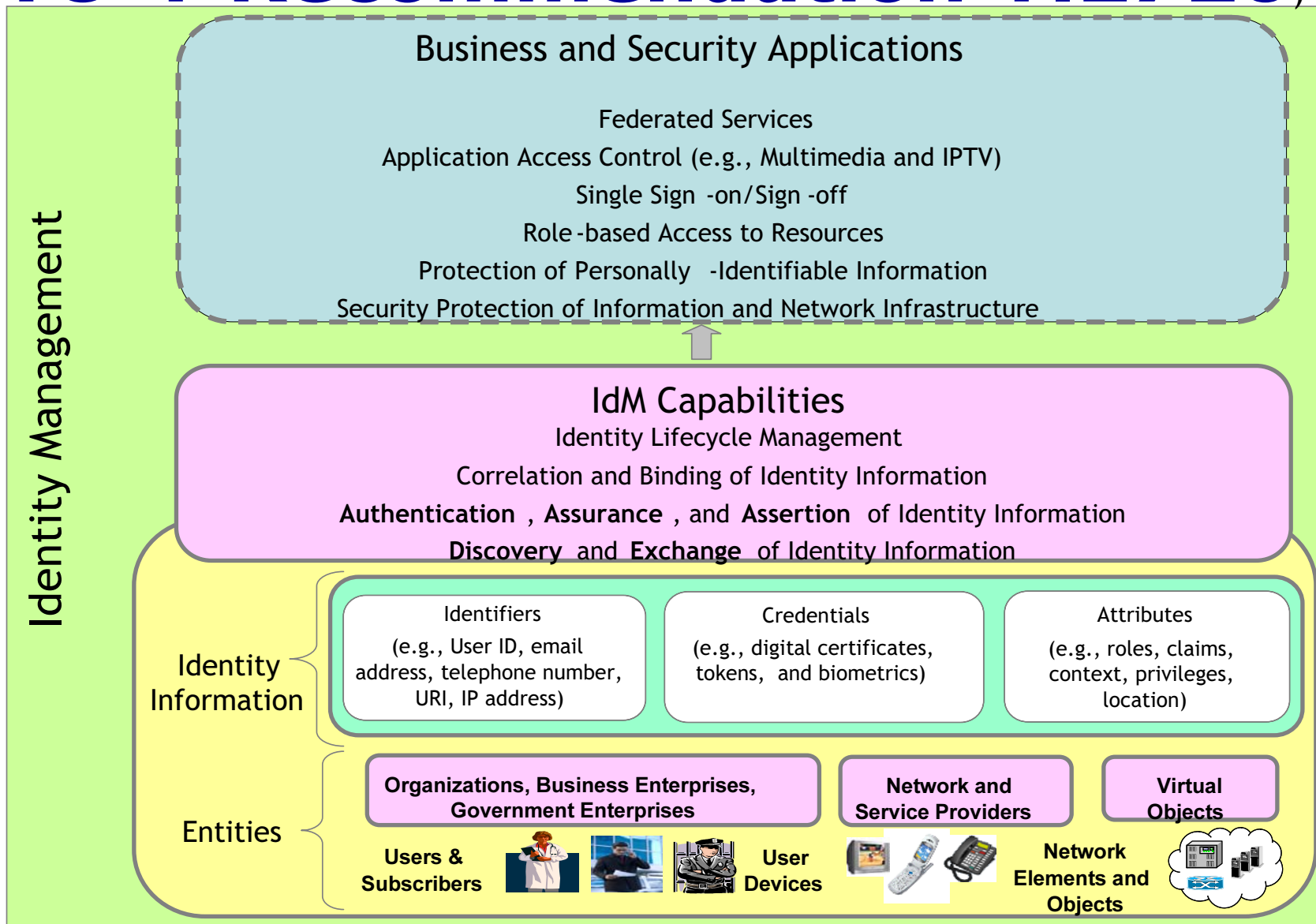
Question	Title
Q.4/13	Requirements and frameworks for QoS enablement in the NGN
Q.16/13	Security and Identity Management
Q.17/13	Packet forwarding and deep packet inspection for multiple services in packet-based networks and NGN environment

**Q.16/13 of WP 4 is dedicated to studies of security and identity management**

# Identity Management as an Application Enabler

- IdM deals with the life cycle and correlation of identifiers
- It enables the emerging applications that rely on integration of the IMS-based authentication with the
  - PKI-,
  - OpenID-
  - Kerberos-based authentication mechanisms
- These integration mechanisms are being standardized in ITU-T SG 13
- IdM is an enabler of the Mobile Payment applications – work item of SG 13

# Identity Management (After ITU-T Recommendation Y.2720)



# Standardization of the new services in Question 16 (1/3)

Mechanism for integration of the PKI-based authentication with IMS

- IMS security is based on the AKA mechanism, while security of certain NGN services (e.g., IPTV) is based on PKI certificates.
- The integration mechanism:
  - Enables blending of the NGN services and IMS services
  - Leverages the strength of IMS security

# Standardization of the new services in Question 16 (2/3)

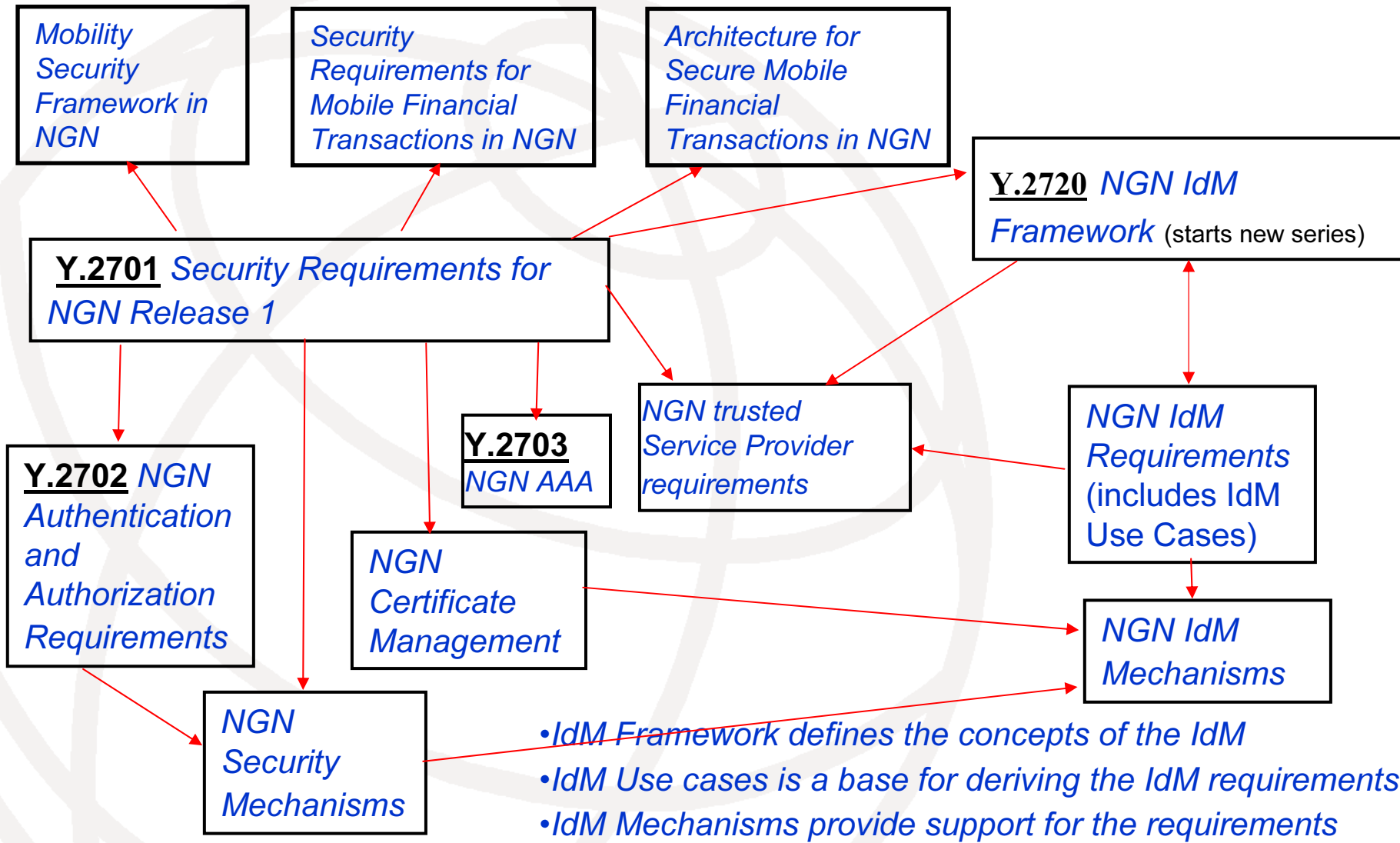
- Mechanism for integration of the OpenID-based authentication with IMS
  - Enables the network operators to provide identity services to the users accessing the Web applications
  - Provides users with a SSO across the IMS and web services with an existing ISIM application
  - Allows users to control their public identifiers on the Web as specified by OpenID
  - Improves user security by engaging a user-trusted network operator in the access control to the Web applications

# Standardization of the new services in Question 16 (3/3)

- Mechanism for integration of the Kerberos-based authentication with IMS
  - ➔ Allows a network provider to offer a range of authentication and authorization services based on a 3G handset. Particularly it can support the following use cases:
    - Access of the services of the enterprise network by a user with a 3G handset
    - Access of the Video-on-Demand (VOD) services offered by a Kerberos-enabled VOD server by a user with a 3G handset



# Work items of Question 16 (Security and Identity Management)



# Leadership of the IdM and Security work in SG 13 (1/2)

- Hui-Lan Lu (Alcatel-Lucent, USA) – Chairman of WP 4/13
- Igor Faynberg (Alcatel-Lucent, USA) – Rapporteur of Q.16/13
- Igor Milashevskiy (Intervale, Russian Federation) – Associate Rapporteur of Q.16/13

The table below lists Editors of the Q.16/13 documents

Document	Editors
<b><u>Y.2701</u></b> <i>Security Requirements for NGN Release</i>	Martin Dolly (AT&T, USA) Takashi Egawa (NEC, Japan)
<b><u>Y.2702</u></b> <i>NGN Authentication and authorization Requirements</i>	Martin Dolly AT&T, USA Ray Singh (Telcordia, USA)
<b><u>Y.2703</u></b> <i>The application of AAA service in NGN</i>	Michael Hird (UK) Heang-Suk Oh (ETRI, Korea)
<i>NGN Security Mechanisms</i>	Martin Dolly (AT&T, USA) Takashi Egawa (NEC, Japan)
<i>NGN Certificate Management</i>	Martin Dolly (AT&T, USA) Ray Singh (Telcordia, USA)
<i>Architecture for Secure Mobile Financial Transactions in NGN</i>	Igor Milashevskiy (Intervale, Russian Federation)

# Leadership of the IdM and Security work in SG 13 (2/2)

Document	Editors
<i>Security Requirements for Mobile Financial Transactions in NGN</i>	Igor Milashevskiy (Intervale, Russian Federation)
<i>Mobility Security Framework in NGN</i>	Yinxing Wei, (ZTE, PR of China) Terry Wang (ZTE, PR of China)
<b>Y.2720</b> <i>NGN IdM Framework</i> (starts new series of Recommendations)	Richard Brackney (DoD, USA) Takashi Egawa (NEC, Japan)
<i>NGN IdM Requirements</i> (includes IdM Use Cases for NGN)	Martin Dolly (AT&T, USA) Enhui Liu (Huawei, China) Anthony Rutkowski (Verisign, USA) Ray Singh (Telcordia, USA)
<i>NGN IdM Mechanisms</i>	Takashi Egawa (NEC, Japan) Zachary Zeltsan (Alcatel-Lucent, USA)
<i>NGN Requirements and Use Cases for Trusted Service Provider Identity</i>	Martin Dolly AT&T, USA Ray Singh (Telcordia, USA)

# Questions that Question 16 of SG 13 studies (from the Q.16/13 description)

- Recommendations, enhancements needed to standardize identification and cataloguing NGN threats and vulnerabilities?
- Security requirements of NGN to effectively counter these threats? Which of these requirements should be included in all NGN and which could be offered as an optional service?
- Recommendations or guidance for comprehensive, E2E security in NGN that span across multiple heterogeneous administrative domains?
- Recommendations or guidance for enabling attachment of terminals securely to NGN?

# Questions that Question 16 of SG 13 studies (from the Q.16/13 description)

- How to define security architecture of identity management in next generation networks?
- What are security requirements to identity management in NGN?
- What new Recommendations are needed for supporting security requirements of identity management in NGN?
- What new Recommendations are needed for supporting secure interoperability among different circles of trusts (CoT) in NGN?

# Questions that Question 16 of SG 13 studies (from the Q.16/13 description)

- What are security requirements of IPTV as its study evolves?
- What new NGN Recommendations are needed for supporting security requirements of IPTV?
- What new NGN Recommendations are needed for supporting security of financial transactions?
- What enhancements are required to provide energy savings directly or indirectly in information and communication technologies (ICTs) or in other industries? What enhancements to developing or new Recommendations are required to provide such energy savings?



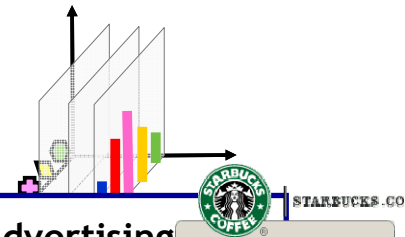
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## **Section 3: New Business Models and Use Cases**

# New Potential Business Models



**Enhanced Loyalty Mgt:**  
End-user trade usage credits with frequent flier miles / other loyalty points



**Targeted Advertising:**  
“Free” minutes, reduced content with receipt of advertising / coupons

**User Centric Personalized**

**Third-Party Applications:**  
Enabling Revenue Acceleration with 3<sup>rd</sup>-party application developers



**Tiered Pricing:**  
Identity Management / Zero-Sign-on with pricing based on bandwidth usage



**Privacy / Preferences:**  
End-user defines application behavior, conforms service to their needs

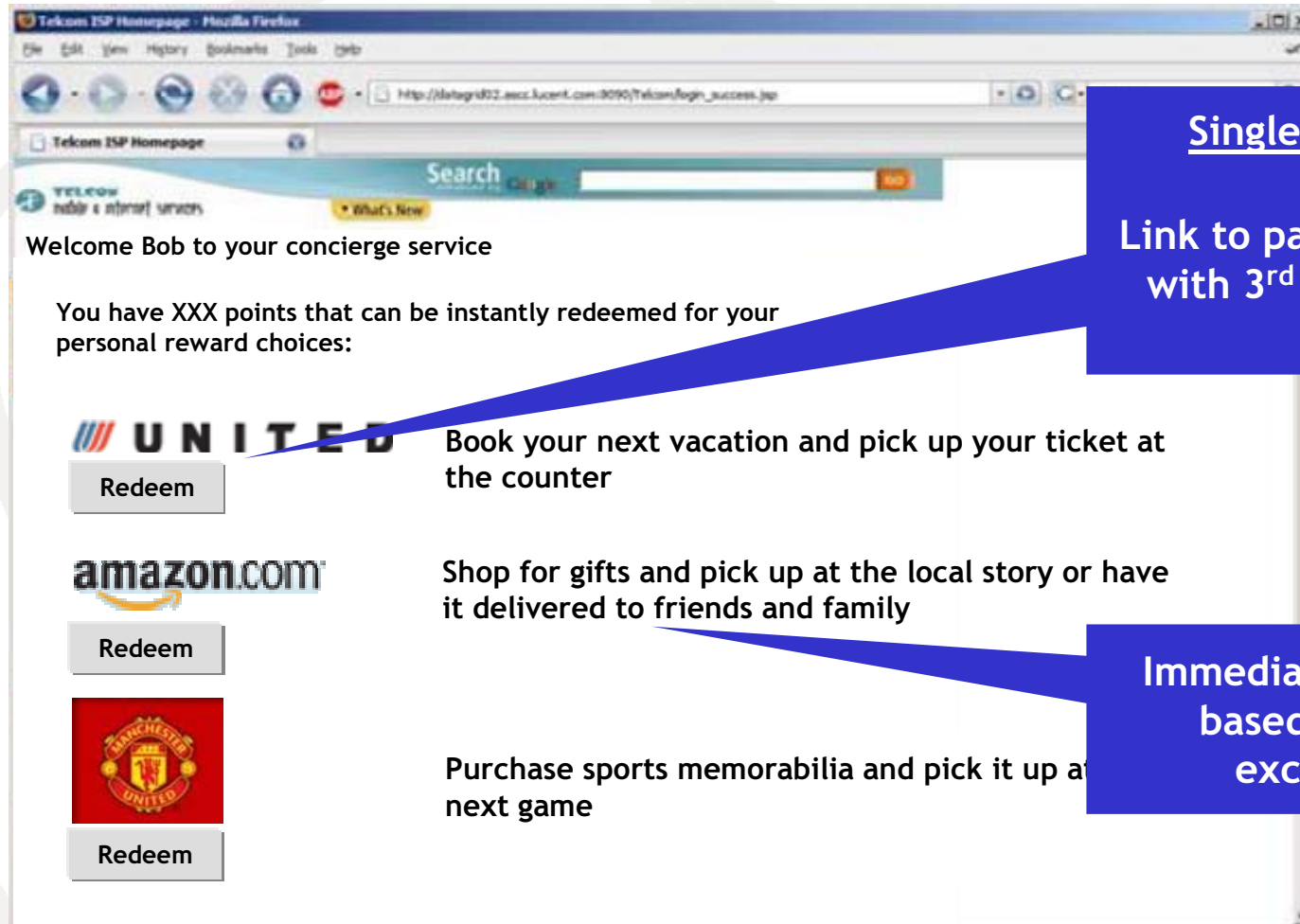
**Policy Mgt**





# Loyalty rewards

## Determined by subscriber preferences



Single Sign-on / Identity Federation

Link to page where transaction with 3<sup>rd</sup> party actually takes place

Immediate, real-time results based on redemption / exchange of points

# Loyalty rewards Determined by subscriber preferences



Telcom ISP Homepage - Mozilla Firefox


http://[datagrid02.eccc.koent.com:8090/Telcom/login\_success.jsp

Telcom ISP Homepage

Search


WELCOME Bob to your concierge service

You have XXX points that can be instantly redeemed for your personal reward choices:




**Redeem**

Book your next vacation the counter



**Redeem**

Shop for gifts and pick up it delivered to friends and family



**Redeem**

Purchase sports memorabilia for your next game

Bob clicks on United  
With Federated Identity,  
no add'l "sign-on /  
password" required

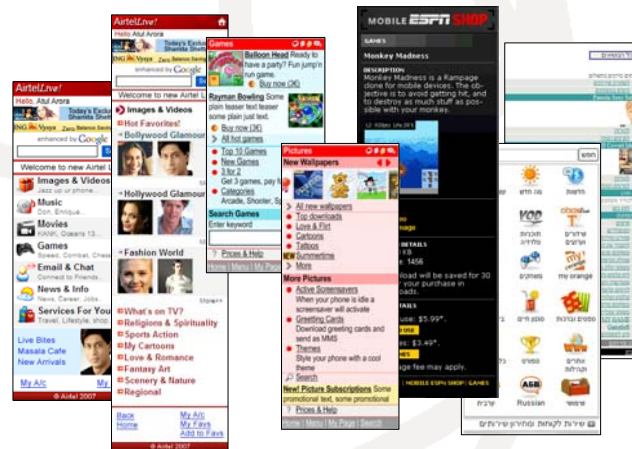
Or – decides to go shopping  
and clicks on Amazon.com  
– again, no add'l "sign-on /  
password" required

Identity federation through Data Grid provides single sign-on across domains

# Multi-Screen Content store front Personalization at it's finest

## ■ Personalized discovery

- Stores targeted to specific subscriber market segments, devices, bearer's location, and preferences
- Personalized portal with specific theme, content offers and promotions
- Dynamic, branded portals and subscriber storefronts
- Customizable templates and reusable components for mobile and Web subscriber portals



Tailor the storefront based on Identity-based preferences

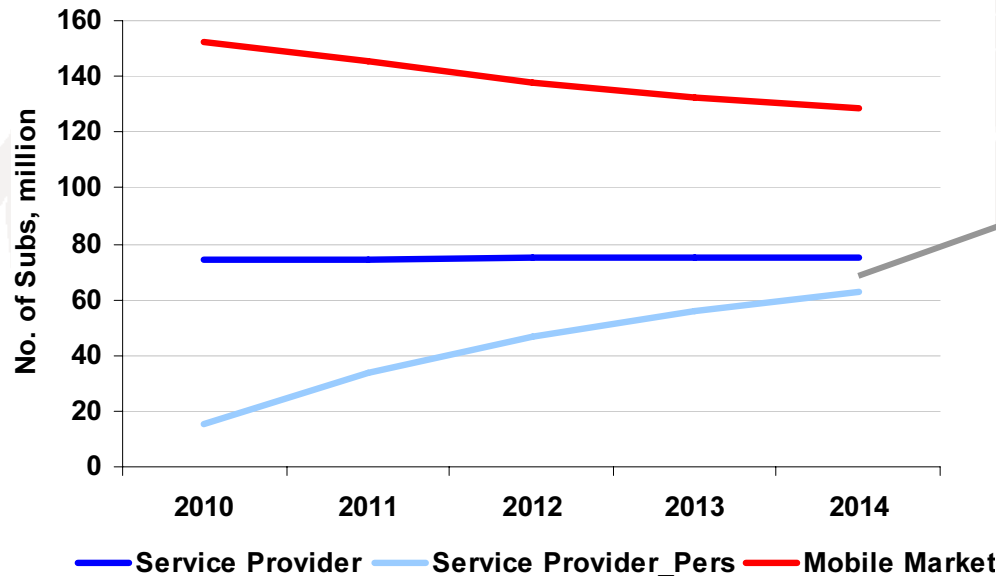


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**Section 4: Conclusions**

# Identity As A Service: Network personalization Will Lead

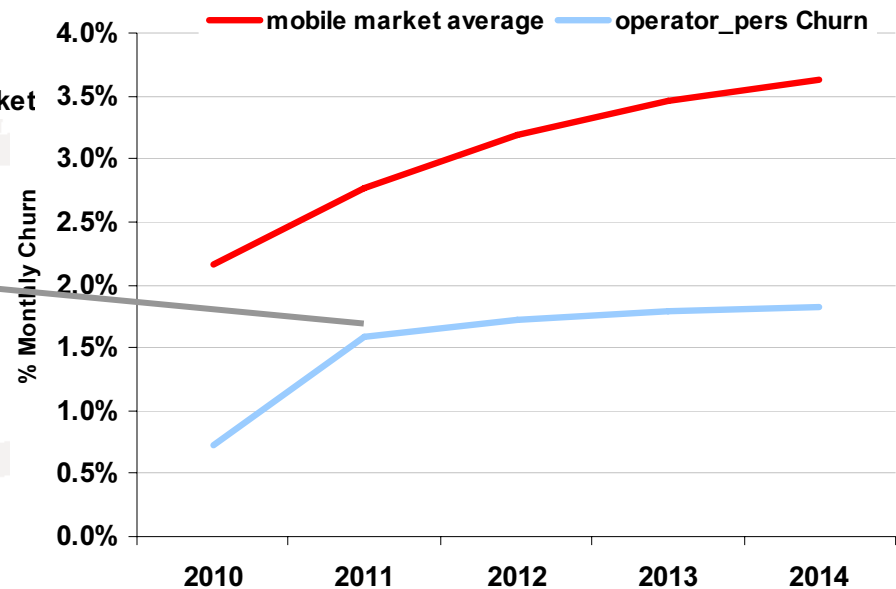
Market Share Trends



Personalization will lead to changes in market dynamics

Personalized services will increase take rate from “generic” services – dropping competitors market share

Churn Comparison



Personalized services will reduce churn – too difficult & inconvenient to transition/move “personalized” attributes to other providers

# Collaboration on IdM and security with Standards Development Organizations (SDO)

Question 16/13 works with the following SDOs:

- ITU-T Study Group 17 (SG 17) 
- The Joint Technical Committee 1 of the Organization for International Standardization and the International Electrotechnical Commission (ISO/IEC JTC1) 
- The 3 Rd Generation Partnership Project (3GPP) 
- Open Mobile Alliance (OMA) 
- Liberty Alliance 
- Internet Engineering Task Force (IETF) 



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**Q&A**