

Joint ITU - AICTO Workshop on "Interoperability of IPTV in the Arab region"

(Dubai, UAE, 20 – 21 September 2011)

IPTV audience measurement standardization for future IPTV

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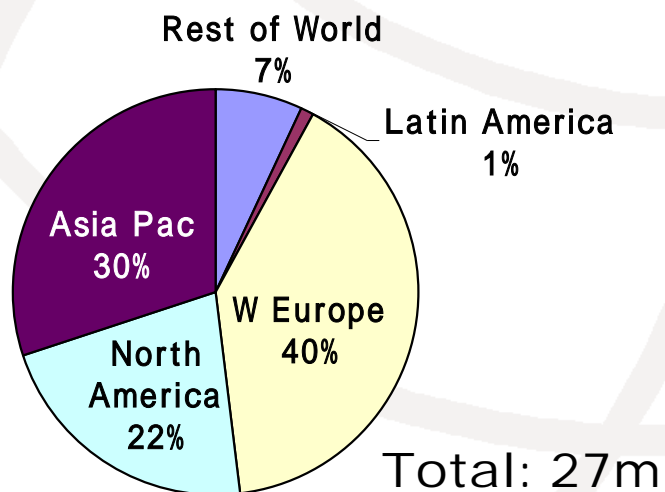
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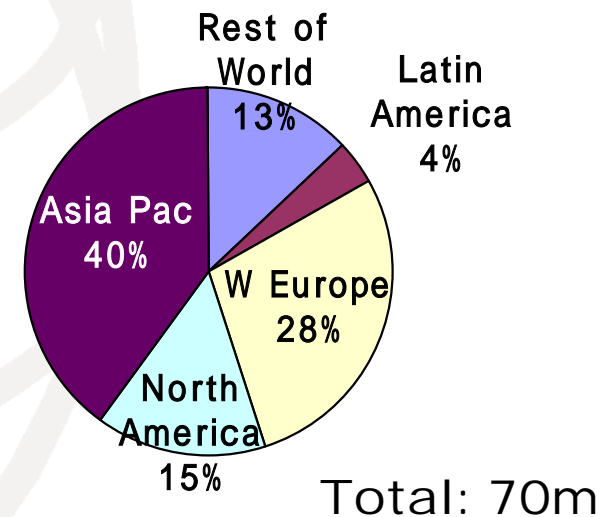
IPTV market overview

- IPTV has emerged as a hot topic within the global digital entertainment and telecommunications industries.
- Broadband and video compression technologies have matured to the point where it is now feasible to offer competitive and compelling IPTV services.
- The ratio of Latin America and Asia Pacific will be increasing.

IPTV Subscribers(2009)



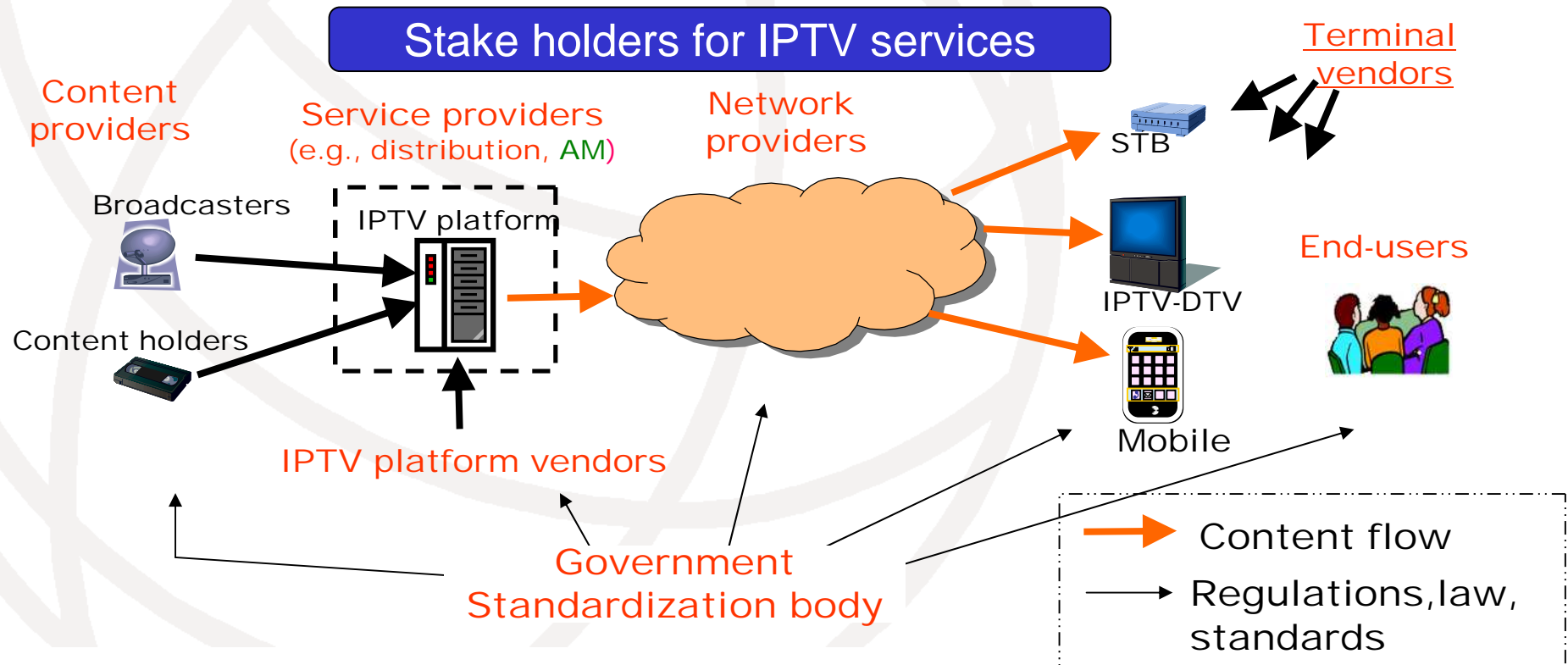
Projected IPTV Subscribers (2014)



*Source: Informa Telecoms & Media "IPTV (5th edition)" 2009

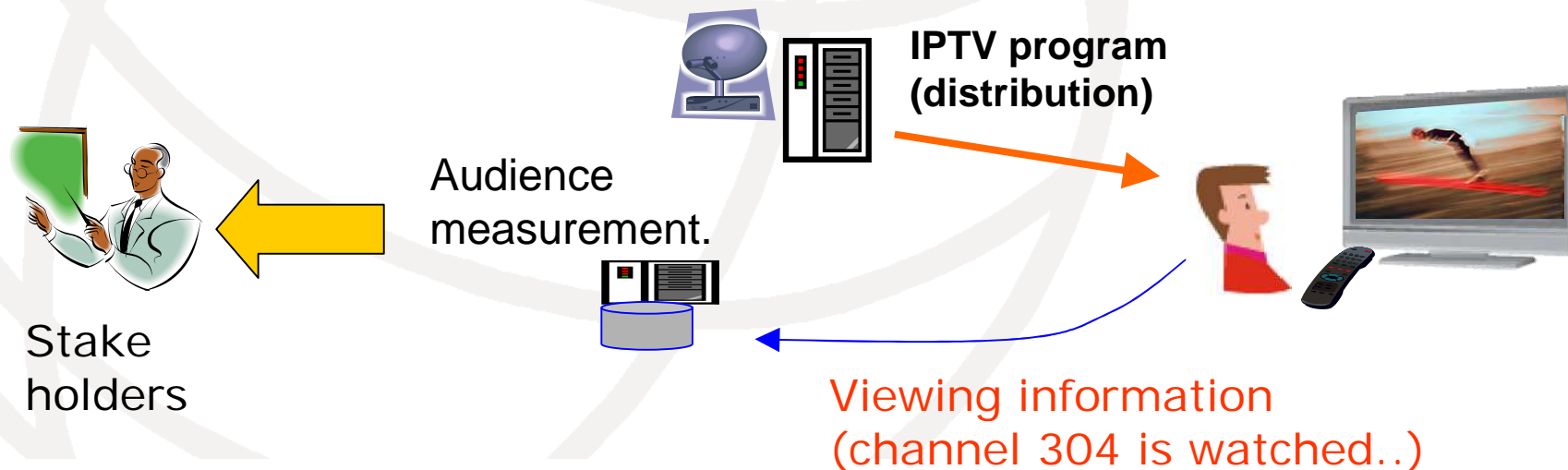
Current IPTV stake holders

- There are lots of stake holders that are related with IPTV services. Those stake holders are restricted by regulations, laws, and standards.
- In order to realize the growth of IPTV market, service providers need the deployment of new services.
- Audience measurement (AM) for IPTV is one of the key technologies for such new services that handle user preferences.



What is audience measurement (AM)

- Measuring how many people are in an audience of IPTV services.
- It often also includes the following information to help stakeholders (e.g., service providers and content holders) determine how segments of the audience are engaging with the content
 - Demographic information (e.g., age, gender)
 - Psychographic information (e.g., personality, values, attitude, interests, lifestyles)
 - IAO variables (for Interests, Activities, and Opinions),
- Audience information is privacy information that must be protected perfectly.



The Values of AM to stake holders (1)

- For Service providers
 - Consumer product design / planning
 - e.g., packaging/bundling, pricing, function/feature
 - Business product design / negotiations
 - e.g., media delivery, advertising, banking, carriage fees, ad sales, channel positions
 - Competitive Service Offering
 - e.g., Service personalization, targeted ads
 - Operational optimization
 - e.g., channel-line up, bandwidth allocation, equipment life-cycle, staffing
 - Customer Relationship Management
 - e.g., cross-sell, up-sell, retention

The Values of AM to stake holders (2)

- For Content Providers
 - Content creation and optimization
 - e.g., actors, interactivity, duration
 - Windowing optimization
 - Pricing/licensing
 - Aggregated data products
 - Insight products
- For Market Researchers
 - Aggregated data products
 - Insight reports e.g. ads - channel, location
- For Networks/Programmers
 - Content selection
 - Optimize content and promo placement

The Values of AM to stake holders (3)

- For Advertisers/Agency
 - Ad Placement
 - Target audience segments
 - Return on Investment
 - Creative optimization
- For Data Processing company
 - Aggregated data products
 - Insight reports

IPTV AM standardization status

- Position of IPTV AM
- AM standards structure
- Architecture, roadmap, privacy model and so on.

Position of AM

- IPTV audience measurement (AM) standards are categorized in "H.740: Application Event Handling" series in "Application and End System" (Q13/16)

Overview of ITU-T Recommendations for IPTV

Home networking

H.622.1: Req & Arch for IPTV Home networks

Applications and end-systems

H.750: Metadata for IPTV Services

H.721: IPTV Terminal (Basic)

H.770 : IPTV Service discovery

H.761: Ginga-NCL

H.740: Application Event Handling

H.762: LIME

H.763.1: Cascading style sheets for IPTV services

H.264: video

Architecture, requirements, network

Y.2007: NGN Capability Set 2

Y.Sup 5: IPTV Service use cases

Y.Sup 7: NGN Release 2 Scope

Y.1910: IPTV Functional Architecture

Y.1901: IPTV Service Requirements

Q.3010: Authentication protocol

AM is categorized in H.740 series

Quality of experience

H.701: Content Error-Recovery

G.1080: IPTV QoE

G.1081: Performance Monitoring

G.1082: Improving robustness of IPTV performance

Security and content protection

X.1911: Req & arch for IPTV security

AM standards structure(1)

- “IPTV application event handling: audience measurement series (H.IPTV-AM.0,1,and2)” describes the requirements, functions supported by the IPTV terminal devices, HGW and so on.
- These will be useful for new IPTV service related with audience information.
- For the time being, those are draft recommendations

H.740.amd.1 Application event handling

= ITU standard

H.IPTV-AM.0 ----- Audience measurement **overview**

H.IPTV-AM.1--- AM for **distributed content services**

H.IPTV-AM.2--- AM for **interactive services**

= draft level
(Sept.2011)

AM standards structure(2)

- The target services of AM standardization include not only distributed content service but also interactive services of IPTV.

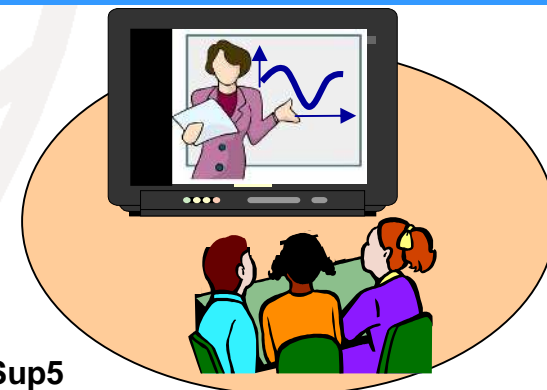
H.IPTV-AM.1

- Distributed content services
 - Broadcast services
 - On-demand services
 - Advertising services
 - Time-shifting and place-shifting services
 - Supplementary content



H.IPTV-AM.2

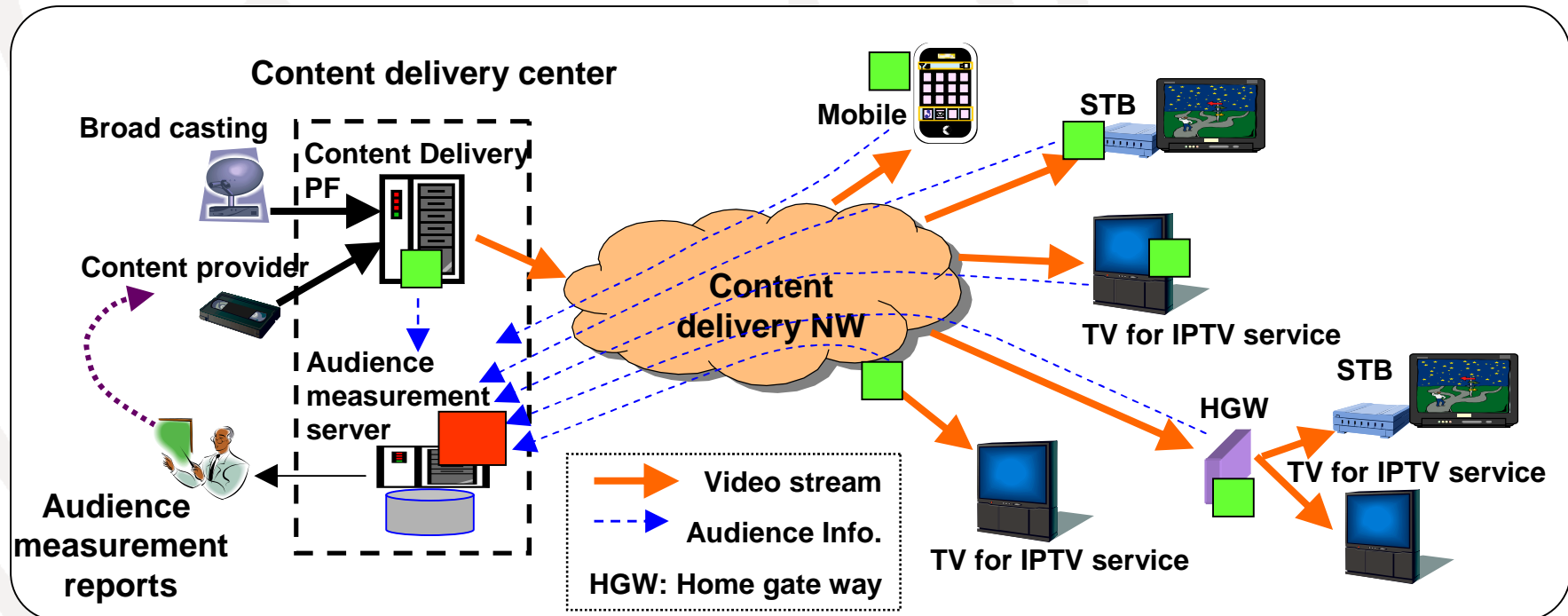
- Interactive services
 - Information services
 - Commerce services
 - Entertainment services
 - Learning services
 - Medicine services
 - Monitoring services
 - Portal services
 - Interactive advertising



AM function location

- AM function can be installed in several points.
 - ➔ E.g. terminals, HGW(homegateway)s, routers, and content delivery platforms.

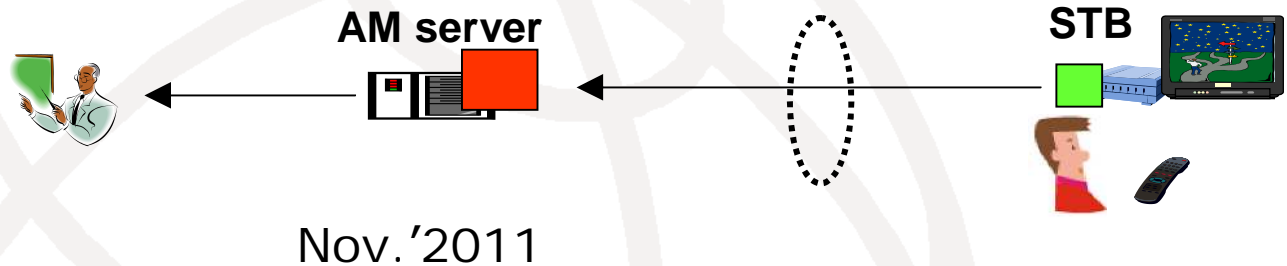
- is audience measurement function
- is aggregation function



Excerpts from ITU-T H.740

Tentative standardization roadmap

- The first target of standard is **linear TV AM**, and its audience measurement function (AMF) location is **terminal devices**.



| | Phase 1 | Phase 2 | Phase 3 |
|-----------|---------|------------------|------------------|
| Services | Linear | Non-Linear | Interactive |
| Locations | TD-AMF | NF-AMF CD-AMF | SC-AMF HN-AMF |

TD: **Terminal device**,
 AMF: audience measurement function,
 NF: network function,

CD: content delivery,
 SC: service control,
 HS: home network

Privacy Model

- Three level privacy model is useful to deploy AM progressively.
- Lower level collects less privacy information.

| | Level 1 | Level 2 | Level 3 |
|----------------------------------------|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| User info permitted with for AM | Distinguishable user, no user information | Distinguishable user, and anonymous user information | Distinguishable user, anonymous user information, and identifiable subscriber or user information |
| Example data | Channel 5 was watched by anonymous user #12683304 on mobile device type "X" | Channel 5 was watched by anonymous <u>male</u> user #12683304 on mobile device type "X" | Channel 5 was watched on mobile device type "X" being used by <u>subscriber or user "John Smith" with email js@sp.net</u> |
| Service e.g. | Contents ranking | Segmented advertisement | Direct advertisement |

**Source: Introduction to ITU-T Audience Measurement (AM), ITU-T,2011*

Permission Modes

- User's policies are declared in a "permit" which includes a permission level
- Permits may also specify providers, services, devices and/or content classes

Permit Examples



“Our family permit AMF to correct information during children watching hour (15:00-20:00) on week days”



Religious programs are considered to be restricted and measurements regarding them are not to be reported.

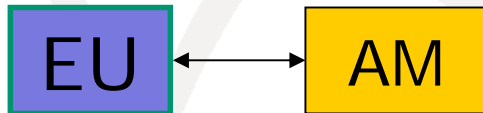


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Permission Mode set during discovery

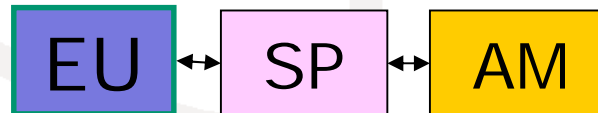
- Service discovery process is the initialization process for IPTV terminal devices to find the IPTV services they will attach.
- As AM services can be operated not only by the Linear TV operator but also independent AM service providers.
- Permission modes are set during discovery in a three different ways.

Internal
Permission Mode



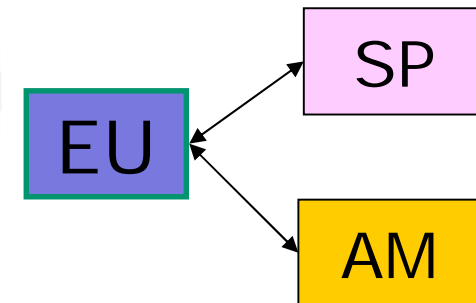
AM responsible
for obtaining and
using permits

External
Permission Mode



SP responsible
for obtaining and
using permits

Hybrid
Permission Mode



SP responsible for
obtaining permits, AM
responsible for using
permits

Conclusion

- IPTV service subscribers are increasing in the world.
- Several stake holders are interested in IPTV audience measurement (AM) for new services.
- Several draft recommendations are under discussion in Q13/16 in ITU-T, and the first versions will be fixed soon.
- These will bring you to the new attractive IPTV services that can handle privacy information appropriately.



■ Thank you for your attention