Audiovisual media services and 5G

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European Broadcasting Union
Technology & Innovation
European Broadcasting Union
Professional association of public service media

73 Members in 56 countries (Europe, North Africa, and Middle East)
  • 780 TV services provided by EBU Members
  • 1040 radio services
  • broadcasting in 123 languages
  • audience reach: > 1 billion people

34 Associates in Africa, the Americas, and Asia

The EBU operates Eurovision and Euroradio.
I will speak about

• Audiovisual media services
• The European audiovisual media ecosystem
  • The strengths and weaknesses
  • Initiative to bring together technology R&D and creative talent
• 5G as an enabler for the AV media sector
  1. Evolution of AV media content and services
  2. AV content production
  3. Distribution of AV media services
  4. Data-driven media services and applications
  5. Integration of broadcast and broadband systems
• Proposals
About audiovisual media services

Audiovisual (AV) media services are more than just ‘video’.

AV media services entail provision of the curated audiovisual media content to the public.

- The key purpose to inform, educate, and entertain
- Editorial responsibility of the service provider
- Subject to regulation (AV content regulation, law on public service media, telecom regulation, copyright law, consumer protection, e-commerce, net neutrality, privacy and data protection, …)

Examples of AV services:
- radio and TV channels
- video on demand
- podcast

Video content but not AV services:
- user generated content
- computer games
- teleconference
- video surveillance

Further information: draft White Paper ‘Audiovisual media services and 5G’
The European audiovisual (AV) media context

The European audiovisual media ecosystem is rich and diverse
- 25% of the global AV market
- Co-existence of commercial and publicly funded providers

European cultural, creative and media industries – key economic sector
- 6.8% of GDP (€860 billion in 2014)
- 6.5% of Europe’s employment (approx. 14 million jobs, highly-skilled)
- Rooted in local territories, economies, and cultures
- Companies of all sizes (more than 1 million SMEs)

World class excellence in both content creation and technological innovation
- Substantial potential for further and sustainable growth in both domains

Substantial challenges
- Struggle to turn home-grown success stories into global opportunities
- Content creation programmes are disconnected from technological developments
  - The old model is broken, too slow to bring R&D results to the users
  - No research programme that combines these two dimensions
- Parallel developments of telecom networks and the purpose-built AV infrastructure
  - Lack of interoperability; no alignment between the development roadmaps
Industry initiative – platform for creativity and innovation in AV sector

Principles:

1. Involve from the outset both technology and creative sectors

2. Convergence between different technology pillars to generate new ecosystems for innovation and user impact

3. Develop enabling technologies for new business models and new services which will be appealing to the users

4. Fast market deployment: shorten the cycle from project ideas to their implementation and potential market impact

5. Turn European diversity into opportunities and orchestrate collaborative actions across creative and technology industries

Supporting organisations:

- Association of European Radios ([www.aereurope.org](http://www.aereurope.org))
- The European Coordination of Independent Producers ([www.cepi.tv](http://www.cepi.tv))
- The European Federation of Journalists ([www.europeanjournalists.org](http://www.europeanjournalists.org))
- The European Broadcasting Union ([www.ebu.ch](http://www.ebu.ch))
- Institut für Rundfunktechnik ([www.irt.de](http://www.irt.de))

Broadcasters: BBC, VRT, Rai, DW
5G as an enabler for the AV media sector

1. Evolution of audiovisual media content and services
   - Content and data creation
   - Service composition
   - Service aggregation
   - Distribution infrastructure
   - User device
   - User interface

2. AV content production

3. Distribution of AV media services

4. Data-driven media services and applications

5. Broadcast – broadband integration
Key research themes

1. Evolution of audiovisual media content and services
   - personalisation, interactivity
   - immersive user experience
   - new formats and genres (cross-media, multi-lingual, multi-platform, …)
   - inclusiveness and accessibility
   - verification of content authenticity and origin
   - new business models

2. AV media content production
   - networked media production
   - news gathering
   - outside broadcasting
   - agile workflows
   - content exchange
   - master file formats
   - security
3. Distribution of AV media services

The currently available distribution options

Content and services

- linear radio & TV
- on-demand
- time shifted
- hybrid
- interactive
- second screen
- data
- personalised
- social media
- cross-platform
- multi-view

The audience

Broadcast

- Terrestrial
- Satellite
- Cable

Broadband

- Fixed networks
  - IPTV (multicast)
  - OTT (unicast)
- Mobile networks (unicast)
3. Distribution of AV media services

5G as a new distribution option

- Content and services
- The audience

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Terrestrial

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Fixed networks
* IPTV (multicast)
* OTT (unicast)

Broadband

5G

EBU
OPERATING EUROCINEM AND EURORADIO
3. Distribution of AV media services

The ultimate scenario?

Content and services

- Linear radio & TV
- On-demand
- Time shifted
- Hybrid
- Interactive
- Second screen
- Data
- Personalised
- Social media
- Cross-platform
- Multi-view
- ...

5G

The audience

EBU
OPERATING EUROVISION AND EUROSOUND
Key research themes

3. Distribution of AV media content and services
   • large-scale distribution to a range of user devices in different user environments
   • sustained quality of service for all concurrent users
   • tools for search, selection, and access to content and services
   • seamless service following
   • policy-based real-time management of service delivery
   • support to free-to-air delivery and a range of access control mechanisms
   • content protection in terms of both signal integrity and copyright
   • flexibility, scalability, reliability, sustainability
   • cost-efficiency

4. Data-driven media services and applications
   • predictive audience analytics
   • real-time recommendations
   • dynamic optimisation of user experience
   • harmonised metadata systems
   • relationship between the technically defined QoS metrics and a subjective, user-focused QoE
   • privacy, data protection, security
5. *Integration between broadcast and broadband*

### Broadcast platforms
- Near-universal coverage
- Guaranteed, predictable quality of service (to large TV sets)
- Optimised for delivery of linear services to very large audiences
- Every user has access to the total capacity of the network

### Broadband platforms
- Bi-directional
- Delivery to portable and mobile devices
- Potentially unlimited choice of services
- On-demand and personalised services
- Well suited to serve small audiences (niches)
- Fast growing population of user devices

### Strengths

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<td>Limitation: limited coverage (with sufficient quality)</td>
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<td>No access to IP-only user devices, only dedicated broadcast receivers</td>
<td>Best effort, no guaranteed QoS</td>
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### Weaknesses

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Broadcast and broadband are complementary.

Substantial synergies and efficiencies could be achieved through integration of the 5G and the dedicated AV media infrastructure.
Proposal

- Establish an umbrella framework that brings together European *content creation* and *technological innovation*
  - Create new opportunities for the European audiovisual and technology sectors
  - Leverage on the European diversity and excellence in both domains
  - Open platform for both large and small media and technology providers, independent producers, as well as start-ups and SMEs

- Proposed research domains:
  1. Evolution of audiovisual media content and services
  2. AV content production
  3. Distribution of AV media services
  4. Data-driven media services and applications
  5. Broadcast - broadband integration

- Involve from the outset programme producers, journalists, and the users to collaborate with technology researchers
  - Requirement capturing, co-development, tests and trials
  - Fast market deployment
  - Education and training programmes to facilitate timely adoption
Thank you
for listening!

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