eXtended Reality in Europe: current activities and preparing for the future

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Bringing European Cultural Heritage into the digital age

- Digitisation, online access, digital preservation - eArchiving
- Digital transformation
- Europeana
- Cultural Heritage Data Space

Education systems fit for the digital era

- Connectivity and digital capabilities in schools
- EU Student eCard
- Emerging technologies in learning and education

Transforming digital experiences with XR

- Encouraging applications across sectors
- Supporting wider adoption
- R&I meeting European values

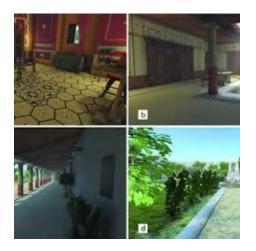European Commission

eXtended Reality (XR) – going mainstream

Learning

Surgery

Leisure

Cultural heritage

Maintenance

Multimodal interaction

Design - Construction

Entertainment

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XR Today

- Gradually moving from hype to reality

- Interest raised by COVID 19 crisis and climate / environmental concerns

- Creating value across multiple sectors in economy and society

- First scalable platforms and rollouts at large companies

- Increasing number of applications engaging users with immersive experiences

- Technology is maturing
  - More capable, comfortable and affordable devices
  - Better infrastructures and faster networks
  - Improved capturing and authoring tools

Challenges

- Domination of non-European corporations on hardware

- Cost of hardware

- Lack of bandwidth for XR on the go (high expectations on 5G, allowing for ex. holographic communications)

- Lack of widely accepted standards (hinders interoperability , increases development and testing costs) – involvement or European players

- Copyright constrains for SMEs to re-use content

- Lack of skills on industry staff

- XR solutions also require artistic skills to create realistic virtual worlds and environments

- Market opportunities in Europe

Image: Unsplash

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Image: Unsplash

Social awareness and acceptance

Involvement of social science and humanities experts is crucial to ensure social acceptance, broad take-up and respect for core European values including ethics, privacy and security, but also equality, non-discrimination and inclusion

• Data privacy and ownership

• Cybersecurity

• Legal consequences of life like immersive experiences (i.e. cyberviolence, etc.)

• Psychological effects

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eXtended Reality in Europe

- Developing steadily, but potential not yet fully exploited

- Market: from $42,5 billion in 2020 to $333billion by 2025

   EU = 15% World Market

- Strengths: software, middleware, content creation, access to content, SMEs

- Weaknesses: hardware (VR->AR->XR), fragmentation, take-up

- Respecting core EU values // trust and confidence in using systems and devices // exploiting data

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Image: Wikimedia Commons

EU funding

Horizon 2020

- €43 million under NGI 2018-2020 (+ €23 million for CH and education)
- Construction, education, health, industry, medical rehabilitation, media, architecture, fashion and entertainment and focusing on multi-user and multi-modal interactions, authoring tools
- XR4ALL, CSA, first seed for a XR community of European actors, investors and solution providers

Horizon Europe

- XR calls under Pillar 2, Cluster 4, Destination 6:
  - XR Modelling (RIA - 2021)
  - XR for All – Haptics (RIA - 2021)
  - eXtended Collaborative Telepresence (IA – 2021)
  - Innovation for Media, including XR (IA - 2021)
  - XR Ethics, Interoperability and Impact (CSA – 2021)
  - XR Learning - Engage and Interact (IA - 2022)
  - XR Technologies (RIA - 2022)

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Links with political initiatives (list not exhaustive)

- European Data Act

- AI strategy

- Media Action Plan - AR/VR Coalition

- Digital Education Action Plan 2

- Green Deal

- DEP – European Common Data Spaces

- Digital Decade

Image: Europeana

Thank you

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