

The background features a dark blue field with intricate, concentric, wavy lines that create a sense of depth and movement. Scattered throughout are several large, semi-transparent spheres in vibrant colors: a large orange sphere with a red ring in the upper right, a smaller blue sphere, a pink sphere on the right edge, a purple sphere in the lower left, and a small orange sphere near the bottom center. The text is centered in a clean, white, sans-serif font.

XR Security, Privacy, Safety, and Ethics Considerations in Higher Education

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Motivations

A decorative graphic on a dark blue background. It features several overlapping circles and shapes in various colors: a large orange circle, a smaller blue circle, a large purple-to-pink gradient shape, a green-to-blue gradient circle, and a blue circle in the bottom left corner.

- Create guidelines for CIOs and Administrators
- Develop a self-assessment to evaluate risk and level of maturity
- Provide overview of XR challenges
- Make recommendations for solutions and policies

XR in Higher Education

- Overview and Recent Developments
- Examples of Instructional Scenarios
- XR Labs and Equipment Management
- Immersive Applications relevant to Teaching and Learning



Potential Security Risk Areas

01

Data Privacy

- Background on XR safety, privacy and security
- Overview of Laws and Regulations of XR in Higher Education
- Device vs Platform vs App data collection and sharing

02

XR Devices

- XR technology procurement (device, platforms, and apps)
- XR device management and protection
- Loaner Programs and BYOD challenges

03

XR Content

- Application development, content creation using XR platform
- Use of 3rd party applications for content creation
- Spatial ownership: instructional vs personal/private XR space

04

XR for Teaching and Learning

- Use of XR for Instructional Assessment
- Balancing privacy expectation with student success
- Privacy implications of instructional XR access from anywhere

Scenarios Illustrating Risk Areas

7 Faculty and Students
Meet in Social VR

2 User Generated Content

3 Remote Access/
Account Management

4 XR Lab

5 Assessment

Scenario 1: Faculty and Students Meet in Social VR

A faculty member purchases a VR Headset and is interested in using it synchronously with students in their course. The Faculty has developed a virtual space on a publicly available third party platform to run weekly meetings. Students in the course were asked to create accounts to enter the virtual space outside of the campus single-sign-on. Some students used their university email while others signed-in with their private accounts. Students are asked to create and embody a human avatar and presented with an option to create it using a still image. Some students use their own images while others choose celebrities, or fictional characters from movies and other media. As part of the virtual session students will view/review assignments or materials assigned by the faculty member, speak and collaborate in small groups and move throughout the virtual space.

- Important questions to ask
 - What access to XR devices will students have?
 - What accommodations must be made?
 - How do you handle device/platform data collection?
 - What considerations about 3rd party platforms should be made?
 - What consents or code of conduct should be signed?



Scenario 2: (Institution/Student/Faculty) Generated Content

Students/Faculty wish to author 360 interactive videos to publish/use within the institution's LMS or CMS. The University has acquired a set of licences for 360° video editing software and sharing platform. Students and Faculty used University 360 Video cameras to film around campus and town. Some of the footage includes dorms and campus spaces. Students compose music to add to the 360 video. 360 Videos are published to the web and available to the public. Not unlike other media projects, student final projects end up being stored on personal drives, a shared class drive, Google drives, the LMS and student portfolio systems. Unlike other media 360 Video and LIDAR files include a range of both visual and other data, that flat video does not.

- Important questions to ask

- What challenges do 360 and LIDAR media present?
- Are these interactive experiences graded assessments?
- Who owns the content that is generated?
- Where is the content hosted?
- What happens when it is downloaded?
- What metadata is collected in these experiences?

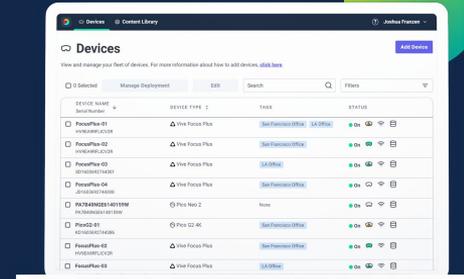


Scenario 3: (Student) Remote access/Account management

Remote students want to use their own Facebook account/VR headset devices to access course content. Some have personal headsets, others are able to check headsets out from the university. Setting up the headsets require students to set up a new account or to link to their existing social media account.

- Important questions to ask

- What devices are they using to access content?
- What data is collected by the device/platform?
- What data is collected by the applications?
- Have students signed a specialized waiver/agreement outlining the data that is collected?
- Who is liable in the case of data breaches/account hacking/data loss?



Scenario 4: (Administrator) XR Lab

A decision has been made to build an XR lab space open to students and faculty. VR and MR headsets were procured and set up in a lab space for the community to use. The computer stations and VR headsets use a set of university accounts dedicated for the XR lab use. VR content has been purchased and made available under these accounts. Some of the VR experiences are available free, some are locally developed while others are professional packs to serve specific discipline needs. Students are invited to visit the lab and access the XR experiences.

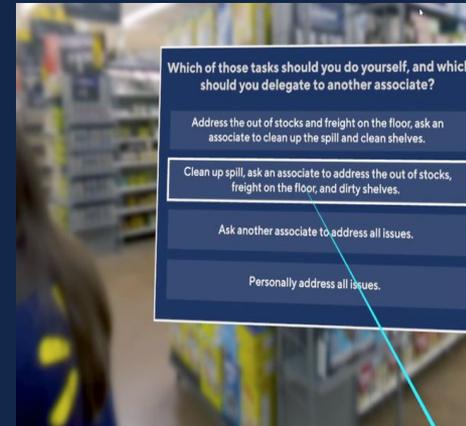
- Important questions to ask
 - What is the Procurement process?
 - What Waivers/agreements are needed?
 - How will you handle the Licensing of content?



Scenario 5: (Assessment)

As part of the course students are asked to complete a set of VR simulations. Each simulation concludes with an assessment module. Some simulations may require for students to complete multiple times in an effort to ensure competency.

- Important questions to ask
 - Where do you conduct the assessment?
 - What obligations do faculty have with regard to all data collected?
 - How do you handle data collected by simulation vendor and headset vendor?
 - What notice should the institution give to students in their desire to collect aggregate data for evaluation of XR for teaching and learning?



Strategic Recommendations

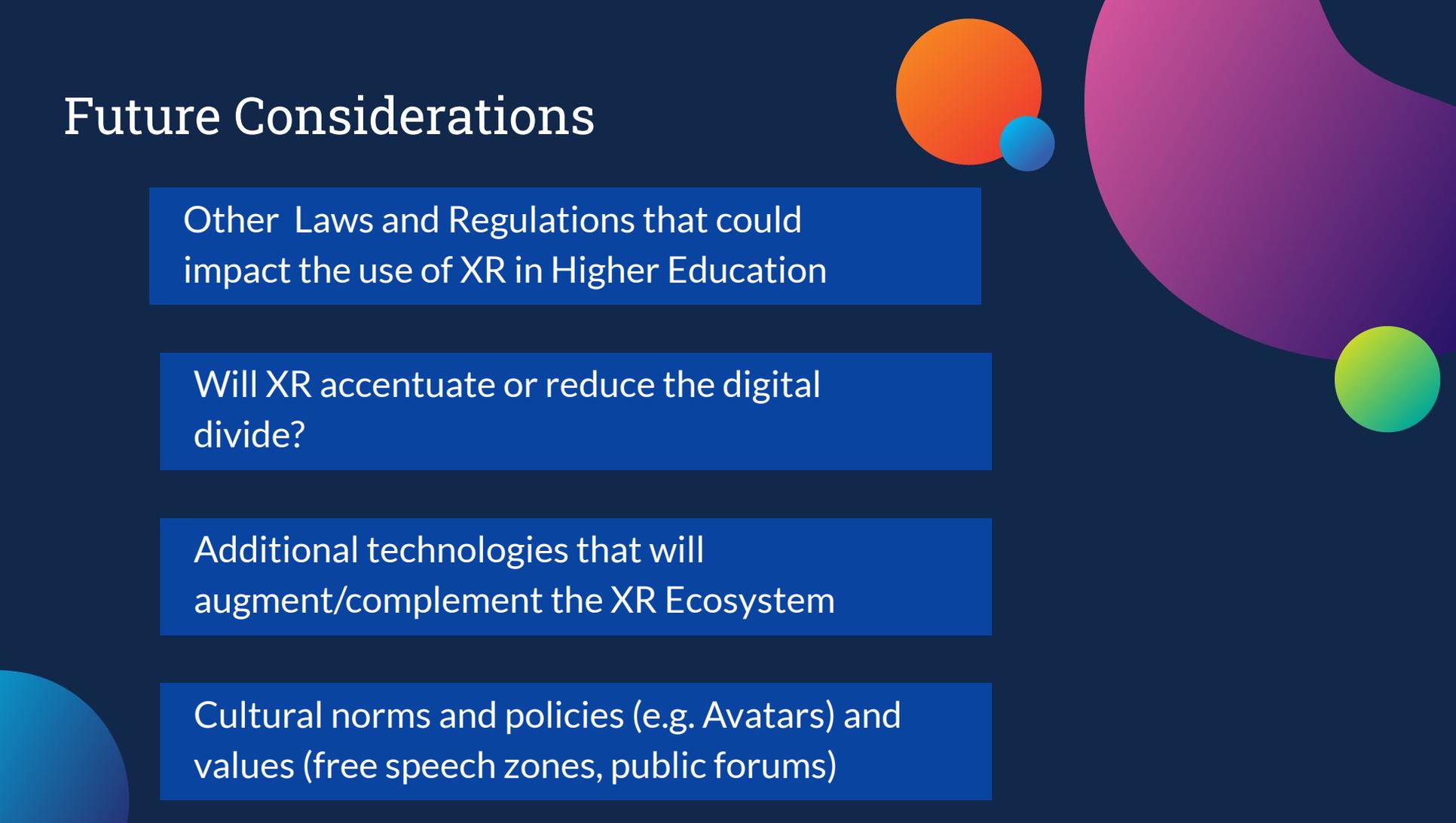
Short Term

- Inventory courses using XR
- Inventory existing XR hardware and management practices
- List of current or planned development activities for instruction
- Draft guidelines for use of XR technology and services for instructional purposes
 - Consent Forms, Privacy requirements, guidelines on device usage, best practices for BYOD and institutional owned devices

Medium Term

- Update existing policies and/or create new privacy and data protection policies
- Update technology acquisition processes
- Create data governance and data retention recommendations
- Engage with IT Governance
- Develop XR Risk Register
- Provide guidelines for minimum and recommended devices
- Evaluate processes for hardware and software acquisition with 3rd parties

Future Considerations



Other Laws and Regulations that could impact the use of XR in Higher Education

Will XR accentuate or reduce the digital divide?

Additional technologies that will augment/complement the XR Ecosystem

Cultural norms and policies (e.g. Avatars) and values (free speech zones, public forums)

Questions?

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