



VRinSight Training Programme

Module A: Outcomes of European survey of SMEs and Higher Education Institutes



University of Nicosia

https://www.softwarefirms.co/blog/top-10-trusted-augmented-reality-ar-and-virtual-reality-vr-app-developmentcompanies-in-chennai-in-2019/amp/



VRinSight

Welcome to the VRinSight Training Programme

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VRinSight Training Programme & Curriculum

The following lecture is just one in a series of lectures as part of the VRinSight *Curriculum*

The aim of this training programme for HEIs is

- to help you get aquainted with the technology of Virtual Reality
- demonstrate how VR technology can enhance Higher Business
 Management Education
- enable you to integrate VR technology into your own coursework and lectures
- enable you to introduce VR technology to your colleagues and demonstrate how VR technology can enhance coursework and lectures

Each learning session is complimented by practical work in the VRinSight Interactive Classroom





VRinSight Training Programme & Curriculum

The following learning session is just one building block in a whole range of learning sessions as part of the *VRinSight Curriculum*

The aim of this training programme for SMEs is

- to help you get acquainted with the technology of Virtual Reality
- demonstrate how VR technology can enhance business management
- enable you to integrate VR technology into your business operations
- enable you to introduce VR technology to your colleagues and demonstrate how it can enhance their business operations

Each learning session is complimented by practical work in the VRinSight Interactive Classroom





VRinSight Training Programme & Curriculum

Module A: Outcomes of European survey of SME and Higher Education institutes

Module B: Virtual Reality for Business and SMEs

Module C: A comparison of VR developments around the globe

Module D: Pedagogical considerations in Virtual Reality Learning

Module E : Step by Step Guideline to good VR practice

Module F : Introduction to the 25 VR applications of the VRinSight Showcase



www.vrinsight.org





Module A

Outcomes of European Survey of SME and Higher Education Institutes

Module Content

1. Overview of VR Tools and software application for HE teaching in business management



2. Overview of the current status of VR in Higher Education in the EU partner countries



3. Examples of use of VR in SMEs with focus on the needs and demands of HEIs' state of the art



3. Challenges – barriers - opportunities - training needs in VR adoption for HE institutions and SMEs













Strengths

- Oculus: high-quality platform
- Oculus Rift/Rift S: performance
- Oculus Go: easy to adopt, cheap
- Oculus Quest: performance (could be enhanced with Oculus Link), easy to adopt, cheap

SWOT

Opportunities

- Oculus Rift: the use of high-end VR-software
- Oculus Go/Gear VR: network effect (many people are able to use)
- Oculus Quest: could be the major breakthrough in VR adoption

Weaknesses

- Oculus: "walled garden" ecosystem by Facebook
- Oculus Rift: resolution
- Oculus Go: performance
- Oculus Quest: -

Threads

- Oculus. connects with Facebook
- Oculus Rift & Go: outdated- No support provided for 1st generation stand-alone devices in the future
- Oculus Quest: -





Overview of the current status of VR in HEIs



The case of Cyprus

- Research labs
- Science education, foreign language teaching, history
- VR tools/devices is being combined with motionbased technologies

VR in Higher Education







Overview of the current status of VR in SMEs



The case of Cyprus

- VR technologies are used in business and training.
- VR in promotion of a new product or service
- VR in professional training and in management
- VR in architecture and real estate

Use of VR in SMEs





Overview of the current status of VR in HEIs

The case of Finland

- Leading countries in the field of education
- Academic research in development of VR
- Lack of ready-made educational VRapplications
- Implementing VR technology in education for high quality social VR applications and high-quality educational content

VR in Higher Education







Overview of the current status of VR in SMEs

The case of Finland

- Focusing on "viewing 3D things in VR"
- Collaboration/co-design
- Sales and marketing
- Operative work
- Education/simulations

Use of VR in SMEs







Overview of the current status of VR in HEIs



The case of Belgium

- Education and training
- VR apps for recognition of dangerous situations in traffic
- VR for Healthcare
- Google expeditions
- SAVI VR Platform

VR in Higher Education





Overview of the current status of VR in SMEs



The case of Belgium

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- Nanopixel, https://www.nanopixel3d.com/
- Viu More (only AR applications), https://www.viumore.com/
- In The Pocket, https://inthepocket.com/
- Yondr, https://yondr.agency/
- OneBonsai, https://onebonsai.com/#virtual-realitydevelopment
- Game parks
- DEME for Healthcare
- VR for safety issues and preparing safety measures

Use of VR in SMEs







Overview of the current status of VR in HEIs



The case of Spain

- Central and regional policies <u>Focus on:</u>
- the incorporation of intelligent systems into production plants,
- the improved use of emerging capabilities and technologies in new products
- the integration of advanced materials into higher added-value solutions
- the efficiency and sustainability

VR in Higher Education







Overview of the current status of VR in SMEs



The case of Spain

- VirtualTriage
- VirtualRet
- Tevrene
- VR Spaceship App
- Risk Prevention
- Forklift VR Simulator

Use of VR in SMEs







Overview of the current status of VR in HEIs

The case of Germany

- Only a few institutes use VR
- VR/AR was often introduced in learning and research to replace an alternative or more expensive technology

VR in Higher Education







Overview of the current status of VR in SMEs

The case of Germany

- Revenue in VR/AR was approx. €160 million, which will grow to €1 billion by 2020
- Investment in VR/AR technology
- Marketing, new product launches, employee training
- Integration of VR with automobile navigation/displays

Use of VR in SMEs







Overview of the current status of VR in HEIs

The case of Austria

- VR has not established itself as teaching instrument in education
- VR in medical teaching
- VR seminars and research projects in various fields of HE
- VR in e-commerce

VR in Higher Education





Overview of the current status of VR in SMEs

The case of Austria

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- VR applications in industry/manufacturing
- VR in architecture
- VR in health care/medical sector
- VR in tourism
- VR in art
- VR for virtual meetings
- VR solutions they meet directly in the virtual scene and work there collaboratively

Use of VR in SMEs







Case of use in SMEs

BMW uses Virtual Reality to Design Production Workstation



https://www.youtube.com/watch?v=2qwDb2WNCWo





Case of use in HEIs

VR in Education



https://www.youtube.com/watch?v=EXYzj6qwCCk







https://kasulik.delfi.ee/news/uudised/noorsootootaja-ametiga-saab-nuudsest-tutvuda-virtuaalreaalsuses?id=84532957

<u>Challenges</u>, <u>barriers</u>, <u>opportunities</u>, and <u>training needs</u> in VR adoption for HEIs





Barriers - Challenges for HEIs



https://www.nbcnews.com/mach/science/what-vr-devices-apps-turn-real-world-virtual-ncna857001



- ✓ High cost
- ✓ Technical boundaries
- ✓ Personal boundaries
- ✓ Lack of knowledge about the real potential of VR
- ✓ Lack of digital skills
- ✓ Portability
- ✓ Functionality
- ✓ Lack of flexibility
- Limited opportunities for collaboration
- ✓ Availability

https://www.itpro.co.uk/desktop-hardware/25091/virtual-reality-devices-to-hit-14-million-in-sales-by-2016





Barriers - Challenges for SMEs



https://www.softwarefirms.co/blog/top-10-trusted-augmented-reality-ar-andvirtual-reality-vr-app-development-companies-in-chennai-in-2019/amp/

- ✓ High cost
- ✓ VR implementation requires space
- $\checkmark\,$ It is complicated to set up
- ✓ Requires prior knowledge in VR
- ✓ Lack of flexibility
- ✓ Absence of 3D models of their current available infrastructure
- Lack of digital information of machines and installations currently in use







Opportunities in SMEs





Training needs for HEIs



https://www.bbc.com/news/business-42963408

Sight

- Basic technical and digital skills
- Handling different type of technologies
- Help teachers with the scenario of their VR-idea
- Knowledge about complex software (e.g. Unity or Unreal)
- Openness
- Willingness to learn new things
- Creativity
- Adaptability



Training needs for SMEs

- Technical skills
- Digital skills
- Handling different type of technologies
- Skills for content development
- Willingness to learn new things
- Adaptability
- Creativity
- Adopt SIL-HIL technologies to be able to apply them in design phases
- Improvement of VR receptivity in the company
- Social skills for the working environment
- Specific production operations.



https://www.amrc.co.uk/news/making-virtual-a-reality-for-uk-manufacturing







Group Discussion - Teams of 4 people

Reflect on the training needs of HEIs and SMEs

Identify any other potential needs to integrate VR and suggest ways/ solutions to mitigate them (40 mins)

Use the post-it notes to share the ideas in your team

Material needed: flipchart, post-it notes for group work



Module assessment

<u>Guiding questions for discussion:</u>

- 1. What is one common training need of SMEs/ HEI? Why is it important?
- 2. Pick one training need of SMEs/HEI and explain how it can be addressed
- 3. Which opportunities that VR offers for SMEs and HEI do you see as the most valuable?
- 4. What kind of VR applications do you think that would be useful? (for communication, education, training..?) Explain your thoughts
- 5. What general features is needed by the VR applications to have so they can be used in HE and SMEs?





Thank you for your attention!