Good practices outside the consortium

Summary and Analysis

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EMERGING MEDIA EXPLORATION

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Introduction

To complement the surveys on good practices in handling emerging media within the consortium, this research phase of the Emerging Media Exploration (EMEX) project set out to identify existing 'good practices' outside the consortium by inviting representatives that have either advanced Emerging Media Curriculum [EMC] with inspiring/innovative courses or have successfully implemented some kind of blended mobility concept [BMC], ideally in the realm of art and media or have developed concepts for involving students in industry projects [SIC] in research and transfer.
The aim was to gain insights from current practices that work well, regarding the teaching of emerging media, the challenges of industry collaborations and the challenge of intercultural distance learning.

Methodology

Six of the universities inquired met at least one of these criteria and made themselves available for a qualitative, partly structured interview.

Name	Institution	Role/Position	Criteria	Reference Key
Markku Reunanen	Aalto University	Head of New Media Design and Production.	EMC, SIC	MR A
Artem Smolin	ITMO	Head of Information Systems in Art and Humanitarian Sciences department/ Information technologies in Design / Multimedia technology)	EMC	AS ITMO
Prof. Paul Coulton	Lancaster University	Professor of Speculative and Game Design	EMC, SIC, BMC	PC ULanc
Dave Stikkolorum	The Hague University	HBO-ICT Team Manager at The Hague University / The Hague University of Applied Sciences	BMC	DS THUAS
Prof. Constanze Langer	University of Applied Sciences Potsdam	Pro-dean for special tasks: Head of study course interface design chief financial officer	EMC, SIC	CL FHP
Prof. Markku Hauta-Kasari	University of Eastern Finland	Programme Director of IMLEX, Master of Science in Imaging and Light in Extended Reality	EMC, SIC	MHK UEF

Table 1 - Respondents to the interview

Since some interviews were more of a discussion the statements of the interviewer Prof. Björn Stockleben [BS FBKW] are also given.
Depending on the focus of the university, different blocks of questions were addressed.

Question blogs for universities	
1. General Questions ● Name of Institution ● Faculty and Study programme represented ● Individual background of the person interviewed ● personal motivation and relation towards emerging media	**2. Emerging Media Curriculum & Courses** ● What role do emerging media play in your curriculum? ● When did you start to integrate emerging media as part of the curriculum and why? ● Which are important competencies to teach with regard to emerging media (related to your respective disciplinary background) and how do you teach them? ● How do you harmonize the rather static concept of a curriculum with the rapidly changing landscape of emerging media technologies? ● Do you collaborate interdisciplinarily and if so, with which disciplines and why? ● How do you teach being creative with emerging media? ● How do you teach the technology basics of emerging media?
3. Blended Mobility Concepts ● What is the main purpose of your blended mobility concept? ● How do you define blended mobility? ● How do you create sociability? ● How do you create a transnational atmosphere? ● How are onsite and online parts intertwined?	**4. Student-Industry Collaboration** ● How do you involve students on any level in industry collaborations? ● What kind of projects are you looking for? ● How do you find and select your industry partners? ● Why do industry partners collaborate with you? What are the core competencies they value and what do you expect? ● Did you ever disappoint an industry partner and what are likely causes for such disappointments? ● How do students work on the briefs? ● How do you integrate the industry partner throughout the course? ● How do you cope with the different pace and structure of work at a university and outside (academic year vs. project driven industry, long-term vs. short-term planning)

Table 2 - Blocks of questions

The qualitative content was analysed via an inductive approach in order to code the verbatim survey responses into meaningful categories that can answer the key questions of the EMEX project.

Emerging Media Curriculum & Courses

Roles and types of emerging media being addressed by the Interview partners

The role of emerging media and the different types being addressed vary greatly, depending on the focus of the programs offered.

The Aalto university focuses on his program for majors on 'Game Design and Production, New Media Design and Production, and Sound in New Media [MR A].' The students from ITMO have to take mandatory courses on 'Digital culture'. For the students on Bachelor level this means: Introduction to digital culture, Analysis and storage of digital data, applied statistics and digital culture in professional life. Students in the master program need to absolve: Data processing and analysis and applied artificial intelligence.

The University of eastern Finland is very specialized regarding emerging media. They focus on Imaging and Light in Extended Reality.

The creative exchange program in Lancaster and the design courses in Potsdam do not focus on emerging media technologies in the first place, because: 'Technologies aren't inherently immersive [...] [PC ULanc].' Similarly, Prof. Constanze Langer of the design program in Potsdam, states that the solution to a design problem does not necessarily lie in emerging media [CL FHP].

Managing and Teaching Emerging Media

Curriculum

All universities that teach emerging media have different approaches to deal with the rapidly evolving technology.

Regarding the curriculum: 'This has been identified as a big challenge [MR A].' Therefore, Alto University adapts its curriculum every two years and the responsible teachers discuss and decide on the new curriculum in a group. But a main point '[...] is to have focus on the constants, i.e. methods, not on expiring devices and technologies [MR A].'

A similar approach is used in the IMLEX (Master of Science in Imaging and Light in Extended Reality)
study programme. The modules consist of two parts, one fundamental part, teaching the not changing basics and another applied part, that is flexible and adapts to technological developments. Industrial speakers are invited to take new technologies into account [MHK UEF].

The curriculum of the creative exchange program in Lancaster allows a lot of freedom and exploration. For study programmes that are more design-oriented it is not important to name the technologies in their curriculum. [CL FHP].

Teaching technology

Due to the continuous and rapid development of technology, current knowledge is not always available at the university. In order to cope with this situation, experts are invited. This is done by:

1. Inviting Alumni to lead workshops [CL FHP],
2. Giving academic scholars and teachers a short time teaching position or inviting them to workshops [MR A; CL FHP; MHK UEF]...,
3. ...or inviting industrial representatives to the lectures [MR A; MHK UEF].

For most universities that have an emerging media curriculum, working in workshops – in which students can explore the technology - is an essential part of the teaching concept [MR A; CL FHP; PC ULanc].

Teaching creativity

As stated in the survey carried out within the EMEX Consortium, critical thinking and creative problem-solving are important factors for studying emerging media. To foster those skills the principle approach is to engage students in workshops and project work [A; PC ULanc; MHK UEF; PC ULanc; CL FHP; MHK UEF].

'Hands on with minds on' is the motto at Aalto University, but 'there is no explicit teaching regarding creativity [MR A].' At ULanc and FHP the starting point is always '[...] the problem a person has or you want to solve [CL FHP].'

'The main purpose of the Creative Exchange was designed to bridge students with industry problems [PC ULanc].'

In the Creative Exchange Programme from Lancaster University students are engaged in the exploration and discovery rather than jumping to a solution. The focus is on the process [PC ULanc].'

Prof. Paul Coulton emphasises that they want to move beyond western thinking. 'Allowing for very different perceptions of the world [PC ULanc].'

Other practices in teaching emerging media

Design disciplines are not necessarily familiar with emerging media, but there are ways to shape the experience. If the solution of a problem includes emerging media, students with less experience in emerging media are instructed to approach the result with several prototypes to 'Fake' the real experience. 'Aesthetically perhaps by Photoshop retouch, conceptually rather by the comic strip.' [CL FHP]. And for the style and experience something small in VR. It is important to take away 'the fear that it has to be finished [CL FHP].'

Prof. Markku Hauta-Kasari, Programme Director of IMLEX-Master, finds it very important to keep the groups together throughout the semester [MHK UEF].

The IMLEX-program developed a smart virtual laboratory to demonstrate physics courses. It can be used between campuses and students have access during their entire study [MHK UEF].

Teaching interdisciplinary and intercultural

Most of the universities that work with emerging media collaborate and teach interdisciplinary [MR A; PC ULanc; CL FHP]. Lancaster collaborates 'with computer scientists; hardware level, data, AI, psychologist, sociologists and

more recently philosophers [PC ULanc].`
Prof. Paul Coulton considers the work with philosophers to be particularly important when working in AI and ethics. The Alto University collaborates with movie, arts and media technology, the design field and photography. Also visiting teachers and students have different backgrounds.
The University of Applied Sciences Potsdam collaborates with disciplines that show interest in the technology. Those are mostly related disciplines, but lately it has been civil engineering, building information modelling, and architecture [CL FHP].
The program of the University of eastern Finland is very specialized. They bring in different four different perspectives by having international cohorts, composed of European and Japanese students. The entire study program takes place in 4 different countries. The first semester takes place in Finland for all students, in the second semester the group splits up according to their major and goes to France or Belgium and in the third semester the students meet again in Japan [MHK UEF].

Key competencies for Emerging Media

From the universities' point of view, basic knowledge is required to tackle the field of emerging media.
However, what this basic knowledge contains is described quite differently.
For Prof. Constanze Langer it is simply 'Math, German and English [CL FHP].'
A major component of the IMLEX Program is the teaching of basic knowledge in relation to their specialization in Imaging and Light, like Photonics and the physical characteristics of optical lenses, that will not change over time [MHK UEF].
ITMO has a mandatory course on "Digital culture" including:
Intro to digital culture, Analysis and storage of digital data, Applied Statistics, and for Master students: Basics of machine learning and data analysis, Digital culture in a professional life [AS ITMO].
Required competences on the part of the industry partners can vary. Markku Reunanen from Alto university declares that: 'There is no systematic picture of company needs but group working skills, and capability to work in an international environment appear to be important. Programming skills are valued, of course. Project management and design skills as well. Social media related course has been recently added since companies seem to value those skills [MR A].'
The cooperation partners in the Creative Exchange Programme at Lancaster University '[…]expect high quality research, a pathway to impact and decent output [PC ULanc].'

Blended Mobility Concepts

Purpose of the blended mobility concept

Both universities that were interviewed about their Blended Mobility Concept state that the purpose of their concept is to provide their students with an international working environment [PC ULanc; DS THUAS]. The Hague University hopes to: 'Facilitate an understanding of what it is like for designers to work with developers within international teams [DS THUAS]'.
Whereas the main goal for Lancaster University is to: 'Decolonizing our own curriculum in the sense of attracting scholars from around the world rather than a very narrow western set of values [PC ULanc].' The aim is to open up students experiences regarding social, cultural and networking skills.

Challenges of Blended Mobility

Working in a virtual presence can bring several challenges. Technical difficulties can make communication difficult. To create sociability in a physical space is easier and kind of takes care of itself [DS THUAS]. In addition, problematic group dynamics can be better perceived and accordingly better addressed [PC ULanc].
Blended mobility concepts are based on the idea of implementing a project partly through virtual learning and partly in a physical meeting in which the ideas are implemented [DS THUAS]. The COVID-19 situation shows that both

parts are needed. 'Especially when we base a lot of the practical work in the studio, we can't replicate this online. We allow for experimentation as part of the learning process. It is this that we struggle to do online [PC ULanc].'

Good practices for Blended Mobility Concepts

'The key is to use platforms students are already familiar and engaging with for their normal social activities [DS THUAS].' For the physical meetings it would be perfect if students could visit their peers in their home country, so that each group can experience a different culture [DS THUAS].

Student-Industry collaboration

All the universities teaching in the field of emerging media do some kind of industry collaborations, but on different levels. The collaborations also emerge in different ways.

Project Acquisition

Prof. Paul Coulton and the University of Applied Sciences Potsdam are well known for their work. They are recommended and industry partners contact them with project requests [CL FHP; PC ULanc]. For the ITMO university in St Petersburg and the Alto university in Helsinki industry collaborations do take place, but mostly with no direct involvement from the university. Students arrange industry collaborations themselves in the form of internships and are often linked to the topics of their thesis. At ITMO a practical training experience at work must take place at least for three months. ITMO and Alto university only rarely facilitate industry collaborations where company cases are utilized for students' project work.

Selection of projects

In the early days of the program ULanc took whatever project they could get and paid a small fee for it. 'This was really important for the small companies we worked with as there would have been no way these types of companies would have been able to work with us [PC ULanc].'
Nowadays Prof. Paul Coulton is mainly interested in data driven experimental research.
The FHP also selects the projects 'according to the amount of research [CL FHP].' Gaining knowledge must be a part of it [CL FHP].

Student involvement

At ULanc the students run the projects as project managers alongside collaborators and academics. 'This is really important as the students need to get their PhD out of it, they need to gain experience from running a project, the industry partner needs to see something that is usually in the form of an output

and the department gets the exposure [PC ULanc].'
For the University of Applied Sciences in Potsdam there are different ways to involve the students, depending on their skills and the complexity of the project [CL FHP]. Projects are either integrated in the teaching and students earn credits for it or students are contracted as freelancers or working students or, as a third version, a team of students gets assembled depending on their competencies to fulfill a certain task [CL FHP]. In the experience of Konstanze Langer, there is rarely a briefing at the beginning of a project, so one of the first tasks for the students is to approach the topic together with their teachers and develop a brief and narrow down the requirements.
At Aalto University 'students find projects they can do for companies and they get credits from these [MR A].' In the IMLEX program of the University of Eastern Finland the students are brought together with industry partners for their master thesis [MHK UEF].

Industry involvement

Industry partners are integrated by being invited to the university, be it to give lectures, participate in joint workshops, or give feedback to the students [MR A; CL FHP; MHK UEF].
At the IMLEx programm the industry partners have not been invited to lectures so far, but this is under discussion, at least to explain the need for the work that is done. Prof. Constanze
Langer also appreciates when the partners come to contextualise the project [MHK UEF; CL FHP].
Lancaster University and the University of eastern Finland have regular meetings with their partners. At UEF the partners are part of a quality administrative board and give feedback on the IMLEX program. They are also invited to the IMLEX-day that takes part after the first semester and where students are also present [MHK UEF].

Challenges

'Matching the interests is hard [MR A].' The reason for this are different expectations on the part of the university and the industry partners [MR A; CL FHP; PC ULanc].
Sometimes companies expect free labour [MR A; CL FHP], or they offer 'bread and butter' business not suitable for project work at universities, because they are 'irrelevant for academic training' [CL FHP]. It happens, however, that potential clients consider the university a state-financed agency [CL FHP].

Another challenge can be the semester structure and mismatching schedules [CL FHP; MR A].
Summer break is problematic for partners, installations often take 6 months to complete so they must continue over a semester [MR A].'
Although there are teachers who maintain a collaboration over several

semesters, it can have the disadvantage that students are occupied with only one topic for a long time [CL FHP].

Regarding the schedules it is especially difficult for small companies to make time available for a collaboration. Unlike industries, universities should not have 'to focus only on efficiency and effectiveness', but the expected pace gets faster [CL FHP].

Depending on the university and varying on every project, it can be a problem to protect the intellectual property rights of the students [CL FHP]. Students own 'of course only the copyright, not necessarily the right of use [CL FHP].'
Setting up the contracts 'is incredible tough and it takes an incredible amount of time [...], if it really wants to take everything in account [CL FHP].'And 'the more you work in the commercial sector, say automotive, pharmaceutical or something else, and the bigger the company, the more they push to patent everything [...] [CL FHP].'

Good practices

Regarding the intellectual properties other universities have:
'No big problems, relaxed practises. Students own rights to results, acknowledgements are given [MR A]'. In the creative exchange program of Lancaster University it is made clear, 'that our work is open, we publish our works and materials in open access platforms [PC ULanc].'

There are certain conditions which are given in a cooperation with universities. For ULanc it is very important to clarify the expectations early on and also 'Shielding the industry from University politics and procedures is key [PC ULanc].'
To avoid delayed response times, students are the first point of contact for collaborators in Lancaster [PC ULanc]. If the conditions and expectations are not right, the cooperation should not be started [PC ULanc; CL FHP]. Prof. Constanze Langer from Potsdam University for example did not enter a co-operation after long negotiations, since the contracts were not acceptable [CL FHP].
But with big companies can have some advantages. They often allow more freedom, because they have the money to take the risk of an uncertain outcome. When it comes to expectations: 'Experience shows that humanities scholars are more limited in their understanding of what design can achieve than engineers. And the engineers, or the female engineers, or the companies usually leave more room for freedom, simply because they are more similar in the way they work [...] [CL FHP].'
Prof. Constanze Langer from Potsdam University also thinks that projects should fit into a semester, because students mostly have plans for the next semester and they also need to have a clear mind for that and the summer break [CL FHP].

Regarding the project process it is really important that Industry partners are there at the beginning of the project to contextualize and to describe the problems to solve in detail. After the first ideas have been created the Industry partners also need to be present to explain why some ideas are especially good to them [CL FHP].
Prof. Björn Stockleben from the film university in Babelsberg and Prof. Markku Hauta-Kasari from the IMLEX -program in Finland both agree that new technologies need to be tested early in the development and student industry collaborations are a way to do that [BS FBKW; MHK UEF].
Also the collaboration of PhD-Students and Industry partners are known to be very fruitful [MHK UEF].

Key findings

Emerging Media Curriculum & Courses

- Industry collaborations are necessary to keep up with the latest developments in technology.
- Industries need to be involved to contextualize the need and to give feedback on interim results.
- Since the production for most emerging media formats – like virtual production – is very time consuming, prototypes in all stages are especially important.

Blended Mobility Concepts

- Although theoretically any form of teaching can take place online, physical meetings are necessary to turn a group into a team.

Student-Industry collaboration

- Big companies can be good to cooperate with, because they have the resources to accompany the creative solution finding process and give the needed feedback, but on the other hand they tend to be very restrictive regarding the contracts.
- A way to work around this problem is to work with small companies and pay them a fee or to decide that every outcome is ‘open to use’ and make it a condition for collaboration.