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MINUTES OF THE MEETING Academy-Business Cooperation (ABCoperation)

WP4.1. Improved knowledge on university-business cooperation

Online Introductory workshop, February 9th, 2021. (2 PM)

The introductory workshop on the possibilities of cooperation between the university and the business sector is an activity within the work package four (WP4) coordinated by the University of Banja Luka and the University of Maribor. According to the project, it was planned for the activity to be realized in Slovenia, in order to demonstrate the mentioned cooperation on practical examples. Due to the COVID19 pandemic and the inability to travel, at the consortium level a decision was made to organize an introductory workshop online. Representatives of universities and private companies active in the field of ICT not only in the field of agriculture but also beyond were selected as lecturers. The selection of lecturers was made on the basis of suggestions from the Wageningen University & Research, the University of Bucharest, the University of Maribor and the University Donja Gorica (UDG). At the workshop, participants had the opportunity to hear the following lectures:

- 1. Industry-Academia Research Collaboration in Software Engineering: Experience and Lessons Learned** - VAHID GAROUSI (Associate Professor of Software Engineering, School of EECS, Queen's University Belfast, UK Managing partner, Bahar Software Engineering Consulting Corporation);
- 2. Cooperation of University of Agronomic Science and Veterinary Medicine of Bucharest with specialized companies in ICT** - PETICILĂ A.G., STĂNICĂ F., ASĂNICĂ A., UNGURELU R., TEODORESCU R. (University of Agronomic Science and Veterinary Medicine of Bucharest);
- 3. Industry-Faculty Partnership in Slovenia - The use of Drone and Satellite Imagery in Precise Agriculture** - KRAJNC SERGEJ (Termodron d.o.o. Maribor, Slovenia);
- 4. Industry-Academia Collaboration in Montenegro - Digital Solutions for Smart Agriculture** - POPOVIĆ T¹., MARAŠ V^{1,2}., KRČO S³., RADONJIĆ S²., TINAJ S¹., DROBNJAK J¹., PAVIĆEVIĆ K² (¹University Donja Gorica, ²Plantaže 13 Jul, ³DunavNet)



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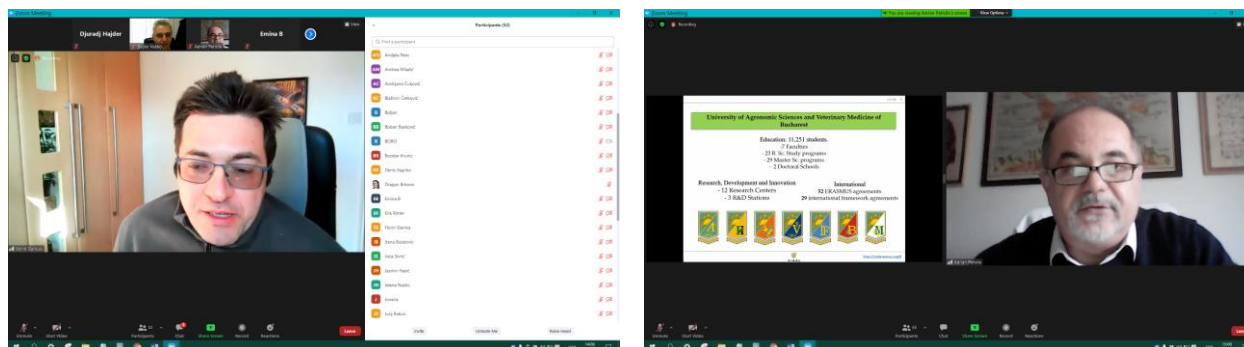


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The workshop was intended primarily for the teaching staff of partner institutions from BiH and Montenegro, as well as representatives of the business sector interested in cooperation with universities. A total of 77 participants from Bosnia and Herzegovina, Montenegro, Serbia, Romania, Slovenia, the Netherlands, Germany, Spain and Georgia have registered for the online workshop. The workshop started on time in accordance with the organization's plan. The workshop was moderated by Prof. Dr. Željko Vaško.

The introductory speaker at the workshop was Professor Vahid Garousi, who has many years of experience in cooperation between universities and the business sector in Turkey, Canada and the UK. Through the lecture, he pointed out the great opportunities for cooperation, but also the open challenges and problems that may arise during the implementation of such cooperation. Professor Varousi further clarified what he believes are the biggest challenges in this cooperation.

Through numerous examples, Professor Adrian Peticila presented various forms of cooperation that the University of Bucharest established with businessmen from Romania. Cooperation is present in various segments of agricultural production.



Sergej Kranjc spoke about practical examples of cooperation between universities and the business sector in Slovenia and examples where precision agriculture must have its place: precision irrigation, fertilization, yield assessment etc. They also talked about the possibility of using ICT tools in unconventional activities in agriculture, such as monitoring of large wild animals that cause great damage in agriculture.

On behalf of the group of authors, Tomo Popović presented the most important projects that are jointly implemented by UDG and Plantaže. Special importance was emphasized through the example in which large companies, in addition to production, are also engaged in development research in order to raise the efficiency of their own production.



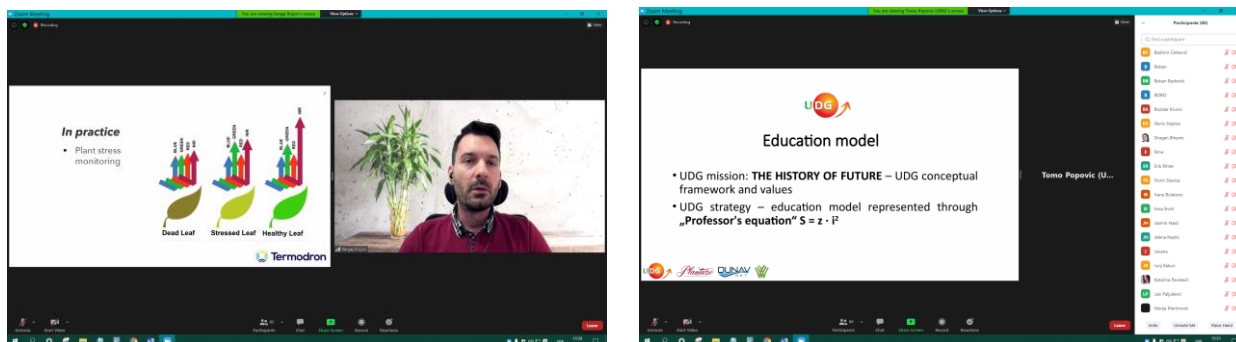
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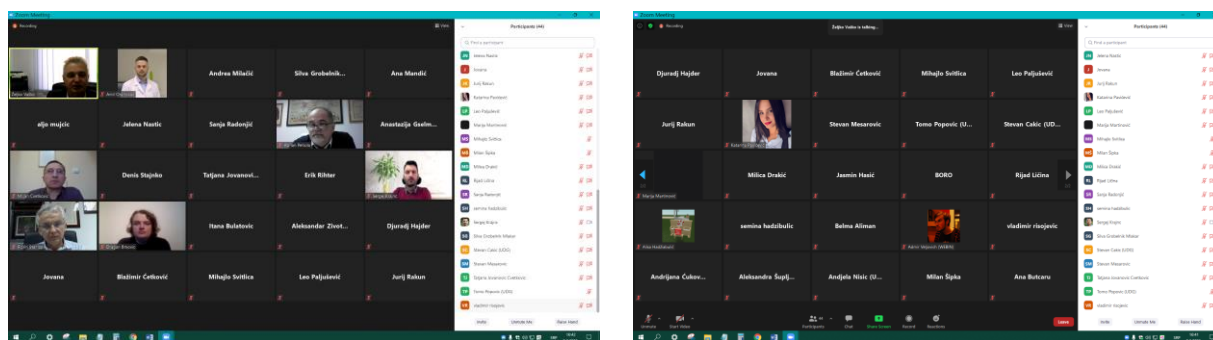


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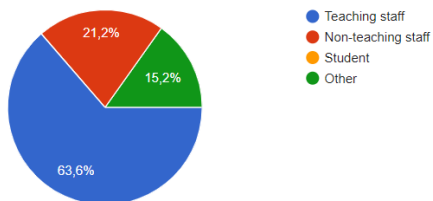
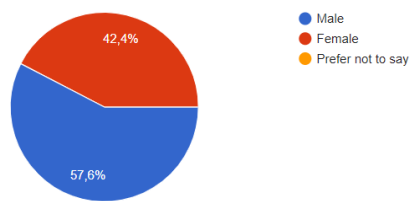
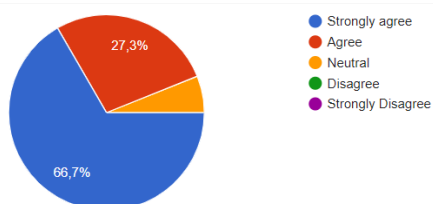
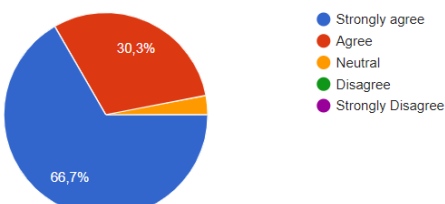
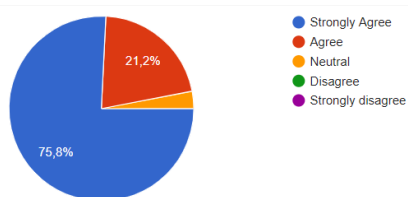
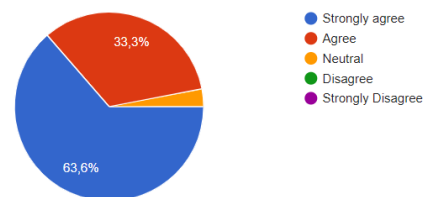
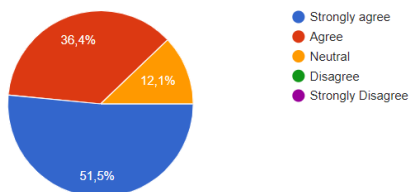
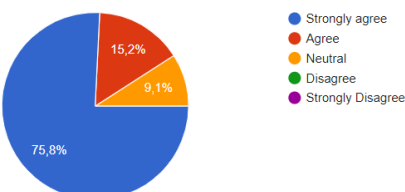
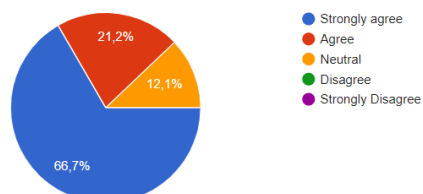
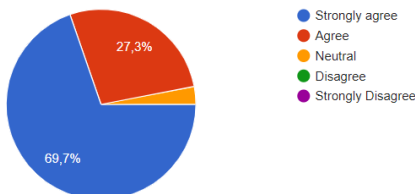
The workshop ended with a session of questions to the lecturers in order to further clarify particularly important segments of the presentations.



The workshop was attended by 66 participants, which indicates the great interest that this topic has aroused among representatives of universities and the business sector.



The workshop was mostly (63.6%) attended by teaching staff (Graph 1). Participants believe that the content of the workshop was relevant and useful (Graph 3), and that the topics of the workshop were well chosen in order to gain new knowledge about the topic of the workshop (Graph 4). The lecturers were competent for the topics they talked about (Graph 5) and very well prepared for the realization of the workshop (Graph 6), as well as the moderator (Graph 8). The event met the expectations of almost all participants (Graph 10). When organizing such events, the most common problem is the duration of such activities (Graph 7), as well as the fact that such events cannot be held live, which would contribute to their greater efficiency (Graph 9).


Graph 1. Participant category

Graph 2. Gender

Graph 3. The workshop content was useful and relevant?

Graph 4. The workshop topics were properly chosen to produce new learning about university-business cooperation?

Graph 5. The trainers/lecturers were well prepared and knowledgeable about event topic?

Graph 6. The trainer/lecturer approach was appropriate?

Graph 7. The workshop duration was appropriate?

Graph 8. The facilitator was well prepared and knowledgeable about event topic?

Graph 9. The workshop platform and condition was appropriate?

Graph 10. The event fulfilled my expectation?



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A large number of participants praised the organization itself, the presented topics and the lecturers who selflessly shared their experience from the previous period:

- *Opportunity to hear presenters experience about the ABC cooperation and have opportunity to ask them questions about practical aspects of this collaboration*
- *Presenters gave great ideas for better cooperation between academia and industry*
- *Opportunity to hear experience and gain knowledge about ABC cooperation from speakers and opportunity to ask questions about practical aspects from this.*
- *The experience in defining and further developing applications in software engineering is especially interesting.*
- *For me, software development and the processes in that development were very interesting.*
- *I like the most application of drones for the agriculture application.*
- *It's opportunity to present the good examples of connection between scientific institutions and different companies.*
- *Lecturers showed many examples when it comes to ABC.*
- *Ideas on the collaboration and challenges identified and overcoming strategies*
- *Diversity of presentations and possibility to hear something new*

The remarks were mainly related to the technical characteristics of the organization of the workshop (start, duration, online meeting, etc.):

- *The time of the beginning of the education was not well chosen. It is better to organize such events in earlier terms*
- *Online broadcasting of the conference*
- *The only thing that i kind of disliked is that it was held online, but ok, the occasions at the moment are not giving us any other options*
- *Workshop topics should be something more applicable in practice*

Conclusion

The workshop showed positive examples of cooperation between business universities and a number of examples. Cooperation is especially important in the field of ICT, not only in agriculture, but also beyond. Interest in cooperation is justified in cases when both parties have clearly defined (economic) benefits from the implementation of such cooperation. The most significant challenge in the realization of such cooperation is the clear definition of the goal that will be worked on during the realization. Positive experiences are of particular importance because they are easily transmitted and can be applied in different environments. A summary of the process of cooperation between the business sector and the university, perhaps best explains one of the slides presented by Professor Garousi in his presentation.



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Challenges and best practices



Challenges	Best practices (success patterns)
<ol style="list-style-type: none"> 1. Lack of research relevance 2. Research method related 3. Lack of training, experience, and skills 4. Lack or drop of interest / commitment 5. Mismatch between industry and academia 6. Communication-related issues 7. Human and organizational factors 8. Management-related issues 9. Resource-related issues 10. Contractual, and privacy concerns 	<ol style="list-style-type: none"> 1. Knowledge management (communication, terminology, transfer, training and skills) 2. Ensure engagement and manage commitment 3. Consider and understand industry's needs, challenges, goals and problems 4. Ensure giving explicit industry benefits and solve the right problem 5. Have mutual respect, understanding and appreciation 6. Be Agile 7. Work in (as) a team and involving the "right" practitioners 8. Consider and manage risks and limitations 9. Researcher's on-site presence and access 10. Follow a proper research/data collection method 11. Manage funding/recruiting/partnerships and contracting privacy 12. Understand the context, constraints and language 13. Efficient research project management 14. Conduct measurement/ assessment 15. Test pilot solutions before using them in industry 16. Provide tool support for solutions



Workshop materials are available on the project website (<http://viralerasmus.org/ict-u-poljoprivredi/>), as well as on the YouTube channel of the project as follows:

- A recording of the whole workshop
<https://youtu.be/QT2GiBzwfNY>
- **Industry-Academia Research Collaboration in Software Engineering: Experience and Lessons Learned** - VAHID GAROUSI;
<https://youtu.be/TTOviCOGJvU>
- **Cooperation of University of Agronomic Science and Veterinary Medicine of Bucharest with specialized companies in ICT** - PETICILĂ ADRIAN;
<https://youtu.be/ialbd3TCI4M>
- **Industry-Faculty Partnership in Slovenia - The use of Drone and Satellite Imagery in Precise Agriculture** - KRAJNC SERGEJ;
<https://youtu.be/-pfCz8-bn0>
- **Industry-Academia Collaboration in Montenegro - Digital Solutions for Smart Agriculture** – TOMO POPOVIĆ.
<https://youtu.be/AbqD-XYBCLU>

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