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## WYDARZENIA UPOWSZECHNIAJĄCE JAKO WAŻNE NARZĘDZIA ROZPOWSZECHNIANIA WYNIKÓW PROJEKTU IBIGWORLD

**Streszczenie:** W pracy przedstawiono wyniki wydarzeń upowszechniających, realizowanych w ramach projektu Erasmus+ „Innowacje dla Big Data w realnym świecie” (iBIGworld) 2020-1-PL01-KA203-082197 promujących wykorzystywanie wyników działań.

Celem wydarzeń było przekazanie działań i wyników projektu szerszej publiczności składającej się z interesariuszy i członków grup docelowych. Ponieważ Big Data to najnowocześniejsze zagadnienia technologiczne, które dotyczą wszystkich, wydarzenia miały również na celu omówienie wszystkich nowych perspektyw i wyzwań w sektorze, które są identyfikowane przez europejskie, akademickie, zawodowe i eksperckie społeczności. Prelegenci zostali starannie wybrani, aby objąć zintegrowany widok wszystkich sektorów, pokazując dowody interakcji między nimi.

**Słowa kluczowe:** wydarzenie upowszechniające, iBIGworld, Big Data

## MULTIPLIER EVENTS AS THE IMPORTANT TOOLS FOR THE DISSEMINATION OF THE RESULTS OF THE PROJECT IBIGWORLD

**Abstract:** This work presents the results of the multiplier events, implemented under the Erasmus + project "Innovations for Big Data in a Real World" (iBIGworld) 2020-1-PL01-KA203-082197 and disseminating and exploiting the results activities.

The aim of the events was to communicate the activities and results of the project to a wider audience consisting of stakeholders and members of target groups. As Big Data is cutting-edge technology issues that affect everyone, the events also aimed to elaborate on all new

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perspectives and challenges in the sector that are identified by the European, academic, vocational and expert communities. The speakers were carefully selected in order to encompass an integrated view of all sectors, showing evidence of the interaction between them.

**Keywords:** multiplier event, iBIGworld, Big Data

## 1. Introduction

Big data is a challenge both for the IT infrastructure of business organizations and for the need for well-trained specialists who can purposefully select and analyze data for business purposes. Big data analysis and the use of business rule extraction and model generation methods contribute to making correct and timely decisions in vital areas such as risk analysis and assessment, profit forecasting, decision optimization, advertising targeting, etc. [1-8]

Big Data has become a cutting-edge technology problem that affects all sectors. The work presents the main results of the multiplier events of the Erasmus + project "Innovations for Big Data in a Real World" (iBIGworld) 2020-1-PL01-KA203-082197 [9]. The events aimed to develop new perspectives and challenges in the sector identified by the European, academic, professional and expert communities. The speakers were carefully selected to encompass an integrated view of all sectors, showing evidence of their interaction.

This work consists of four sections in total. Each of them presents the results of the events held at the national level.

## 2. Multiplier Event E1

Multiplier Event E1 has been an integral part of the iBIGworld project's dissemination and exploitation of results activities. Planned to take place in June 2022, the event was successfully held for 50 local participants and 5 international participants.

Therefore, we've hosted successive event E1 as the Transnational Conference "State-of-the-Art on Big Data: challenges, competencies, and requirements" at 07.06.2022, hotel "Na Bloniach", Bielsko-Biala, Poland

The aim of the event was to communicate the activities and results of the project within a wider audience consisting of stakeholders and members of target groups. As Big Data is cutting edge technology issues that affect everyone, the event also aimed to elaborate on all new perspectives and challenges in the sector that are identified by the European, academic, vocational and expert communities. The speakers were carefully selected in order to encompass an integrated view of all sectors, showing evidence of the interaction between them.

For the event we've had the following objectives:

- to promote and demonstrate the results of the iBIGworld project,
- to raise awareness about the benefits of Big Data technology as innovation domain for business,
- to promote Big Data innovation amongst SMEs,
- to explain the concepts of Big Data innovation,

- to present iBIGworld results: the matrix competencies-topics in the field of Big Data, the eLearning platform for training in Big Data using competence-based approach and use case study, and the Smart Big Data Job Hub platform,
- to encourage public dialogue around the Big Data concept between business managers and trainers,
- The targeted public was made up of the following categories:
- SMEs representatives (staff and management), especially members of the Beskid IT cluster, managed by Rekord SI,
- Big Data experts, consultants, project managers,
- VET training centers interested to promote the training in Big Data,
- academics from management, technology, and social sciences,
- other stakeholders such as clusters and associations.

### 2.1. Preparations

Preparations for the event included the publication of the announcements and invitation (Fig. 1) at the project site [10] and UBB webpage [11], Facebook page and sending out email invitations to info@ath.bielsko.pl and eraz\_ibigworld@googlegroups.com



Figure 1. The announcement and invitation to EI

### 2.2. Event

For the event we've managed to gather a total number of 56 participants, 51 locals and 5 internationals. Dean of the Faculty of Mechanical Engineering and Computer Science for Education dr Dariusz Więcek has started the event. He has greeted the event participants on behalf of UBB authorities.

The head of the department of Computer Science and Automatics prof. dr hab. Mikolaj Karpiński presented the academic and research facilities of the department. Dr Marcin Bernas has introduced the participants to the world of Big Data, presented the basic notions and challenges considered.

The local coordinator of the project prof. dr hab. Vasyl Martsenyuk presented the project's general objectives, target groups, and outcomes of the stage O1 focusing on survey analysis.

Then dr Marcin Bernas has presented the outcomes of the stage O2 joining the Data Science competencies with the topics of the Big Data course oriented to use case study.

Prof. Georgi Dimitrov from ULSIT (Bulgaria) has reported remotely on the experience when developing Big Data framework implemented as a eLearning platform which includes 12 sequential topics strengthened with various learning activities and use cases from real world.

Then prof. dr hab. Vasyl Martsenyuk presented the approach when developing the teacher and business guidelines for Big Data training course as the main outcomes for the stage O4: Piloting.

Dr Marcin Bernas offered the platform for Smart Big Data Job Hub [12]. It will enable to dissemination, mainstreaming, and sustaining the most relevant results of the project. By delivering, disseminating and fully operating the Smart Big Data Job Hub platform, iBIGworld facilitates access to information which is relevant to Big Data employability opportunities, creates closer links between business and community, eases transition to workforce and contributes to the creation of a sustainable learning community that identifies Big Data cutting-edge industrial needs enabling the reforming of academic curricula.

The experience of student's training (C3) in Serbia has been reported by dr Tomasz Gancarczyk. He has displayed the issues of organization of case study and team working during the student's training.

The students team which participated in C3 has also presented the project that was implemented as a result of C3 and devoted to developing Orange+Kaggle+Python platform for Big Data in a real case.

Expert Panels were devoted to presenting some good practices in Big Data which could be also involved as use cases from real world to the project.

Da Vinci firm presented two IT solutions based on Big Data. Da Vinci medicine caused the real interest and discussion among the participants.

The company Precisely focused the attention on microservices vs monolith architecture when developing Big Data solutions. They presented their own paradigm when developing effective code for microservices using functional programming.

Record SI has paid the attention of the participants by the presentation its worth experience when developing Big Data solutions for local governments in Poland during the decades of years. Currently they offer platform which is fully web-integrated with great facilities for data extraction and visualizing.

Finally, the event was completed by fruitful discussions and networking together with the IT teachers from Ukrainian HEIs.

The turnout of the E1 event was higher than initially expected. The initial concept was targeted only to disseminate the intellectual outputs of the project. However, since SMEs presented a few new use cases and good practices, we've adapted the discussion

to enrich the project by the real-world cases coming from IT branch solutions having been developed in the region. For the reason given, the participants of the event have been aware of the potential and importance of using Big Data in real-world processes and in developing a Smart Big Data Job Hub.

### **2.3. Follow-up**

Multiplier event had an evaluation as integral part. We've decided to use an online survey, that participants can access with google form. The evaluation survey had a total of 9 questions:

1. Logistic preparation and organization of the event,
2. Format of the event's agenda,
3. Arrangements of the event (venue, equipment, etc),
4. Duration and timetable of the event,
5. Comments and recommendations for the next multiplier event's agenda,
6. Communication between the organizers of the multiplier event and the participants,
7. Quality of presentations and other materials provided during the multiplier event,
8. Clearness of the presentation of the coordinator regarding project goals, implementation,
9. Opportunities to express your opinion and influence decisions.

Presentations of the reports can be accessed at [13]. Moreover the recordings both Teams and camera can reached at [14]

## **3. Multiplier Event E2**

Multiplier Event E2 has been an integral part of the iBIGworld project's dissemination and exploitation of results activities. The event conducted a success. Representatives from small and large business organizations, schools, and universities were invited. Registered were 95 applicants from Bulgaria . On the day of the event, 64 participants from the business community and 18 from UNiBIT managed to participate in the conference.

The conference was honored with the presence of scientists from the Technical University - Sofia, Institute of Metallurgy at BAS, American University In Bulgaria, Center for Competence "QUASAR", as well as experts from IBM Bulgaria, Expert Vision, AtScale Ltd, SSRAM Ltd, Lyon Technologies Ltd., BLUE Strategy Consulting, Cluster Sofia city of knowledge and many others. Special guests of the event were the leading experts who participated in the project - professors from the University of Bielsko-Biala, Poland, who were included in the program via video conference.

For the event ULSIT had the following objectives:

- to promote and demonstrate the results of the iBIGworld project,
- to raise awareness about the benefits of Big Data technology as innovation domain for business,
- to promote Big Data innovation amongst SMEs,
- to explain the concepts of Big Data innovation,

- to present iBIGworld results: the matrix competencies-topics in the field of Big Data, the eLearning platform for training in Big Data using competence-based approach and use case study, and the Smart Big Data Job Hub platform,
- to encourage public dialogue around the Big Data concept between business managers and trainers.

### 3.1. Preparations

From the beginning of the project, the publication of notices was periodically organized, which served to inform the public about the results of the project. By publishing announcements and interviews about the achieved results and realized events under the project, we strived to reach our real target groups, namely business companies, teachers and students. We used posts on Facebook, publishing news about the project on the official website of ULSIT, as well as articles in national publications.

The invitation to participate in the event was distributed through several channels:

- Facebook posts,
- Invitation on the official site of ULSIT [15],
- Invitation on the official site of Faculty of information technologies of ULSIT [16],
- invitation sent by mail to our contacts from our local and regional public bodies and academia representatives.

Poster was prepared through which we informed the public about the upcoming event (Fig. 2).



Figure 2. Poster for the event Transnational Conference "Big Data for Digital Innovation in Industry 4.0"

A registration form was developed for participation in the event, which was provided to the invited guests (Fig. 3).

The registration form features a header with the following elements:

- iBIG World** logo on the left.
- Event title: **"Innovations for Big Data in a RealWorld"**
- Project ID: **iBigWorld:2020-1-PL01-KA203-082197**
- Б И Т** logo on the right.
- Co-funded by the **Erasmus+ Programme of the European Union** logo.

The main content of the form includes:

- Event title: **BigData for Digital Innovation in Industry 4.0**
- Contact information: **i.kostadinova@unibit.bg** with a link to the profile and a cloud icon.
- A red asterisk indicating a required field: **\*Задължително**
- A label for the email field: **Имейл адрес \***
- A placeholder text for the email field: **Вашият имейл адрес**
- Event details: **Transnational Conference** and **List of participant**
- Organizational information: **THIS EVENT IS ORGANIZED WITHIN PROJECT iBigWorld:2020-1-PL01-KA203-082197 BY UNIVERSITY OF LIBRARY STUDIES AND INFORMATION TECHNOLOGIES**
- Event location and time: **02.06.2022, 15.00 pm, Vitosha Park Hotel**, **Hall 1**, **ul. "Rosario" 1**, **1700 Studentski Kompleks**, **Sofia**
- Program information: **Програма на събитието:** followed by a Google Docs link: [https://docs.google.com/document/d/18\\_WS0O6VdXwRtE42T1RPiQofs4-GZtVS/edit?usp=sharing&oid=104915235523098678609&rtfpof=true&sd=true](https://docs.google.com/document/d/18_WS0O6VdXwRtE42T1RPiQofs4-GZtVS/edit?usp=sharing&oid=104915235523098678609&rtfpof=true&sd=true)
- A label for the name field: **Name of the participant \***
- A placeholder text for the name field: **Вашият отговор**

Figure 3. Registration form "Big Data for Digital Innovation in Industry 4.0"



### 3.2. Event

For the event, 95 applicants were registered from Bulgaria. On the day of the event, 64 participants from the business community and 18 from ULSIT joined the conference.

The host and moderator of the conference was prof. Georgi P. Dimitrov, who is the leader of the team representing ULSIT in the project. He is also the Deputy Dean for Academic Affairs of FIN at ULSIT.

Guests of the conference were scientists from the Technical University - Sofia, Institute of Metallurgy at BAS, American University In Bulgaria, Center for Competence "QUASAR", as well as experts from IBM Bulgaria, Expert Vision, AtScale Ltd, SSRAM Ltd, Lyon Technologies Ltd. , BLUE Strategy Consulting, Cluster Sofia city of knowledge and many others.

The conference was also attended by the Deputy Dean for Research and International Cooperation of FIN at ULSIT - Assoc. Prof. Dr. Boyan Jekov.

Special guests of the event were the leading experts who participated in the project - professors from the University of Bielsko-Biala, Poland, who were included in the program via video conference.

He also presented the main focus of the conference, namely the presentation of the results of the successful completion of the two phases of the project, whose main task is to overcome the crisis of skills in the field of Big Data.

Prof. G.Dimitrov presented also the project's general objectives, target groups, and outcomes of the stage O1 focusing on survey analysis.

Based on these data, 7 surveys were developed, which aimed to collect data from different target groups - survey for students, survey for teachers, for business, for good practices, and IT projects.

Assoc. Prof. Dr. Evgenia Kovacheva from ULSIT (Bulgaria) joined together with Prof. Georgi Dimitrov and they reported on the experience when developing the Big Data framework implemented as an eLearning platform which includes 12 sequential topics strengthened with various learning activities and use cases from the real world. One of the leading specialists of AtScale Ltd Todor Grigorov presented his vision of the needs of the business in the field of Big Data, developing the topic "How to meet the Business needs for Talent".

After that, Dr Marcin Bernas (Poland) has presented report remotely for the developed in connection with the projectSmart Job hub. It will enable the dissemination, mainstreaming, and sustaining of the most relevant results of the project. By delivering, disseminating, and fully operating the Smart Big Data Job Hub platform, iBIGworld facilitates access to information that is relevant to Big Data employability opportunities, creates closer links between business and community, eases the transition to the workforce, and contributes to the creation of a sustainable learning community that identifies Big Data cutting-edge industrial needs enabling the reforming of academic curricula.

IBM experts Violeta Karanacheva and Rosen Kaplanov, by presenting the topic "iBigWorld Success stories" told how staff can be more successful and develop their careers.

Assoc. Prof. Dr. Evgenia Kovatcheva talks about training through building competencies and how to develop the Skills and competencies for Industry 4.0.



Prof. G. Dimitrov gave the floor to one of the lecturers - Assistant Professor Lubomir Gotsev, who participated in the training of students, held in the city of Nis, Serbia, earlier that month.

Lyubomir Gotsev told how the students' training went. How he decided to form international teams by bringing together a student from each of the countries participating in the training.

After him, the floor was given to the participants in the training on "Big Data" - students Gabriela Naidenova and Gennady Gospodinov. They told what they had learned and what tools they had used at the training in Nis. They also talked about the international teams to which they were assigned and the final projects they presented at the end of this training - the projects, developed by Orange and Tableau platform with Big Data in a real case.

Finally, the event was completed by fruitful discussions and networking.

### 3.3. Follow-up

In order to get feedback from our audience for the conference we organized, we prepared an anonymous survey. Her goal was to understand the opinion of our guests about the project and the topics presented at the conference.

ULSIT decided to use an online survey, that participants can access with google form. The evaluation survey had a total of 9 questions (Appendix 1).

Presentations of reports can be reached at [15]. Photos have been uploaded to [16]. For the participants of E2 the certificates have been developed (Fig. 4)

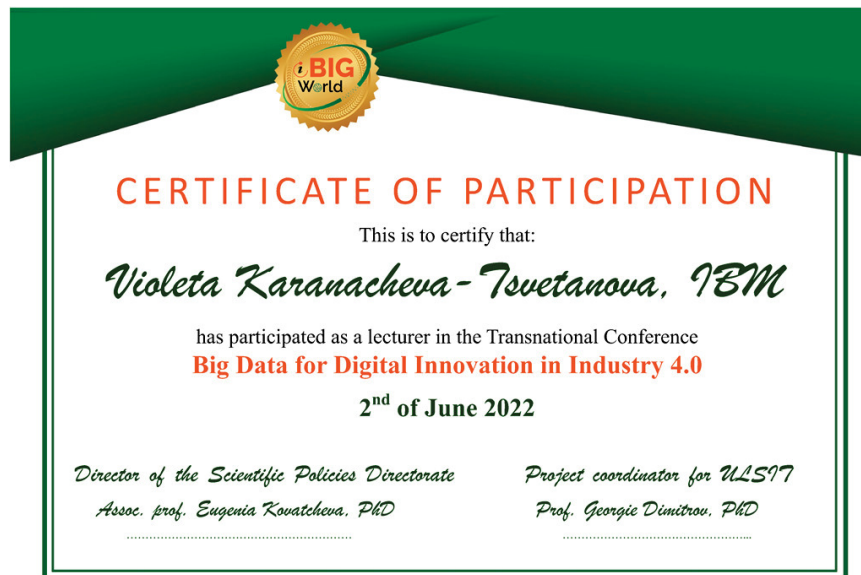


Figure 4. Example of E2 certificate

#### **4. Multiplier Event E3 (Report by University of Niš)**

Multiplier Event E3 has been an integral part of the iBIGworld project's dissemination and exploitation of results activities. Planned event was hosted as the Transnational Conference "Big Data: technologies, requirements and challenges" on 06.07.2022, Conference hall, Science and Technology Park, Niš, Serbia. Representatives from universities and business organizations were invited to take part at the conference. The event was successfully held for 84 local participants.

The aim of the event was to communicate the activities and results of the project within a wider audience consisting of stakeholders and members of target groups. As Big Data is cutting edge technology issues that affect everyone, the event also aimed to elaborate on all new perspectives and challenges in the sector that are identified by the European, academic, vocational and expert communities. The speakers were carefully selected in order to encompass an integrated view of all sectors, showing evidence of the interaction between them.

The event had the following objectives:

- To promote and demonstrate the results of the iBIGworld project,
- To raise awareness about the benefits of Big Data technology as innovation domain for business,
- To promote Big Data innovation amongst SMEs,
- To explain the concepts of Big Data innovation,
- To present ibigworld results: the matrix competencies-topics in the field of Big Data, the elearning platform for training in Big Data using competence-based approach and use case study, and the Smart Big Data Job Hub platform,
- To encourage public dialogue around the Big Data concept between business managers and trainers.

The targeted public was made up of the following categories:

- SMEs representatives (staff and management), especially members of the Science and Technology Park and Incubation IT center,
- Big Data experts, consultants, project managers,
- Training centers interested to promote the training in Big Data,
- Academics from IT, Management, Technology, and Social sciences,
- Other stakeholders such as clusters and associations.

##### **4.1. Preparations**

From the beginning of the project, the publication of notices was periodically organized, which served to inform the public about the results of the project. By publishing announcements and interviews about the achieved results and realized events under the project, we strived to reach our real target groups, namely business companies, teachers and students. We used posts on official Web pages of the project, the University of Niš and the Faculty of Electronic Engineering to publish news about the project, as well as articles interested to the public.

The invitation to participate in the event was distributed through several other channels, such as Facebook posts, by mail to our contacts from our local and regional public bodies and academia representatives, etc. (Fig. 5)



Figure 5. Announcement of E3

#### 4.2. Event

For the event we've managed to gather a total number of 84 local participants. The participants mainly come from local SMEs specializing in the field of Big Data, Artificial Intelligence, Machine Learning and Data Science.

The registration was performed at the main hall in front of the entrance.

The representative authorities, Milan Randelović, director of Science and Technology Park, Milan Banić, Head of Technology Transfer Office of University of Niš, and prof. Dr Dejan Rančić from the Faculty of Electronic Engineering, opened the Multiplier Event. Prof. Rančić, as the local coordinator of the project, presented the project's general objectives, target groups, and results.

The professor at the Computer Science Department, and member of the University project team, prof. dr Dragan Stojanovic presented the academic and research facilities of the department in the context of Big Data, Artificial Intelligence, Machine Learning and Data Science. He introduced the participants to the world of Big Data, presented the requirements and challenges as well as the outcomes of the stage O1 focusing on survey analysis.

Then prof Dejan Rančić has presented the outcomes of the stage O2 joining the Data Science competencies with the topics of the Big Data course oriented to use case study.

Prof. Dragan Stojanović presented the experience when developing Big Data framework implemented as a eLearning platform which includes 12 sequential topics strengthened with various learning activities and use cases from real world.

Then prof. Dr. Marko Milojković presented the approach when developing the student, teacher and business guidelines for Big Data training course as the main outcomes for the stage O4: Piloting. He also introduced the platform for Smart Big Data Job Hub [12], that will enable dissemination, mainstreaming, and sustaining the most relevant results of the project. By delivering, disseminating, and fully operating the Smart Big Data Job Hub platform, iBIGworld facilitates access to information

which is relevant to Big Data employability opportunities, creates closer links between business and community, eases transition to workforce and contributes to the creation of a sustainable learning community that identifies Big Data cutting-edge industrial needs enabling the reforming of academic curricula.

Prof. Dragan Stojanović, who participated in the training of students, held in the city of Nis, Serbia, in May, presented their experience in holding this training. They formed international teams by bringing together one student from each of the countries participating in the training.

The experience of student's training (C3) in Serbia was reported by Djordje Antić. He has displayed the issues of organization of case study and team working during the student's training.

The students team which participated in C3 has also presented the project that was implemented as a result of C3 and devoted to developing Orange+Kaggle+Python platform for Big Data in a real case.

Expert Panels were devoted to presenting some good practices in Big Data which could be also involved as use cases from real world to the project. The successful companies, Diffine (<http://diffine.com/>), Coming (<https://coming.rs/>), and Symia (<https://www.symia.com/>) presented several IT solutions based on Big Data, AI, ML/DL and Data Science.

Their innovative solutions, challenges in development they met and need for expertise and personal in Big Data and related fields, caused the real interest and discussion among the participants.

Finally, the event was completed by fruitful discussions and networking.

The turnout of the E3 event was higher than initially expected. The initial concept was targeted only to disseminate the intellectual outputs of the project. However, since SMEs presented a several new use cases and good practices, we've adapted the discussion to enrich the project by the real-world cases coming from IT branch solutions having been developed in the region. For the reason given, the participants of the event have been aware of the potential and importance of using Big Data in real-world processes and in developing a Smart Big Data Job Hub.

### **4.3. Follow-up**

Multiplier event had an evaluation as integral part. We've decided to use an online survey, that participants can access with google form. The evaluation survey had a total of 9 questions according to the multiplier event E1.

Presentations of reports can be reached at [19]. Video recordings are freely accessed at [20]. You can see the participation list of E3 at [21].

## **5. Multiplier Event E4**

Multiplier Event E4 has been an integral part of the iBIGworld project's dissemination and exploitation of results activities.

Planned event E4 as the Transnational Conference "iBIGWorld Project Successes and Achievements" was successfully hosted at 14 September 2022 by Taras

Shevchenko National University of Kyiv at the Assembly Hall of the Faculty of Information Technologies, Bohdana Havrylyshyna 24, Kyiv, Ukraine.

Representatives from universities and business organizations were invited to take part at the conference. Due to the martial law in Ukraine for those who could not join the conference in person, the distance session of the conference was organized. Therefore, the event was attended by 50 participants in person and 125 participants in distance through the Zoom-meeting. Among all the participants there were 167 local representatives and 8 international representatives. International contingent consisted of 4 representatives from Azerbaijan, 3 – from Germany, 1 – from Turkey.

The aim of the event was to communicate the activities and results of the project within a wider audience consisting of stakeholders and members of target groups. As Big Data is cutting edge technology issues that affect everyone, the event also aimed to elaborate on all new perspectives and challenges in the sector that are identified by the European, academic, vocational and expert communities. The speakers were carefully selected in order to encompass an integrated view of all sectors, showing evidence of the interaction between them.

For the event we've had the following objectives:

- to promote and demonstrate the results of the iBIGworld project;
- to raise awareness about the benefits of Big Data technology as innovation domain for business;
- to promote Big Data innovation amongst SMEs;
- to explain the concepts of Big Data innovation;
- to present iBIGworld results: the matrix competencies-topics in the field of Big Data, the eLearning platform for training in Big Data using competence-based approach and use case study, and the Smart Big Data Job Hub platform;
- to encourage public dialogue around the Big Data concept between business managers and trainers.

The targeted public was made up of the following categories:

- SMEs representatives (staff and management), especially members of the Transilvania IT cluster, managed by ARIES Transilvania;
- Big Data experts, consultants, project managers;
- VET training centers interested to promote the training in Big Data;
- Academics from Management, Technology, and Social sciences;
- Other stakeholders such as clusters and associations.

### **5.1. Preparations**

We periodically informed the public about the ongoing results of the project and the events hosted inside of it through the official resources of the Department of Software Systems and Technologies and Taras Shevchenko National University of Kyiv. The purpose of made publications was to reach our target groups, such as students, teachers and business representatives.

The invitation on participation in the Multiplier event E4 was distributed through:

- the official site of the Department of Software Systems and Technologies both in English and Ukrainian [22] (Fig. 6),
- the official Facebook page of the Department of Software Systems and Technologies both in English and Ukrainian [23, 24] (Fig. 7),



## 5.2. Event

The event was attended by a total number of 175 participants, among them 50 participated in the offline part and 125 joined the distance session of the conference through the Zoom-meeting because of inability to be present in Kyiv due to the difficulty associated with martial law in Ukraine. Among all of the participants there were experts of small and medium-sized enterprises related to Big Data from Incore Development, Avalex Technology, Variteks Group, Global Media Technology and representatives of higher education institutions from National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”, National University of Water and Environmental Engineering of Rivne, State University of Telecommunications, National University of Water and Environmental Engineering, “KROK” University of Economics and Law.

The event was hosted and moderated by Sc.D., Prof. Oleksii Bychkov, who is the Head of the Department of Software Systems and Technologies and the leader of the team representing Taras Shevchenko National University of Kyiv in the project.

Sc.D., Prof. Oleksii Bychkov has opened the event and welcomed all the participants that have joined the conference in person and through the online meeting.

Ph. D., Assoc. Prof. Tetiana Kovaliuk has introduced the audience to the challenges and issues of the modern Big Data field, then presented the main goals and objectives of the iBIGWorld project and the problems it overcomes.

Local manager of the project, Ph. D., Assoc. Prof. Kateryna Merkulova has presented the outcomes of the stage O1 of the project that was devoted to the survey of Big Data stakeholders and analysis of the survey's results to identify the gaps in current specialists training. Ph. D., Assoc. Prof. Sergii Dotsenko has presented the outputs of the stage O2 of the project. She has emphasized that on that basis of the stakeholder's survey partners of the project were able to identify the competences and related to them soft and professional skills that cover the Big Data field as comprehensively as possible to train a competitive Big Data experts.

Ph. D., Assoc. Prof. Iryna Yurchuk has reported on the results of stage O3 of the project that was dedicated to the development and implementation of Big Data framework that includes 12 sequential topics covering the Big Data field with various learning activities and real world use cases. She has presented to the conference participants an eLearning platform that contains materials on Big Data framework and briefly introduced its content.

Unfortunately, during the reports an air raid alert was announced all over the Ukraine due to missile hazard. Therefore, the conference organizers and participants were forced to move in the basement shelter of Faculty of Information Technologies. But it did not affect the conference agenda and we continued as soon as every participant was in the shelter. Assistant Yelyzaveta Zhabska has presented the topics of the framework more detailed. After that she introduced the main outcomes of stage O4 of the project, reporting about the approach when developing the teacher and business guidelines, and also Smart Big Data Job Hub platform that facilitates the communication between business and Big Data community.

After the presentation of the intellectual outputs of the project the representatives of the business have presented their visions on how to develop the skills and competences in the field of Big Data and how the project outcome correlates to the needs and anticipations of their companies. The speakers for that part of the conference: the Director of Avalex Technology Oleksii Kokhanovskyi, the Director



of Incore Oleksandr Hetman, the CEO of Variteks Group Valerii Yakubovskiy. The online session of the conference was held in parallel with its offline part in the Assembly Hall in order to allow to participate for everyone who wished, but could not join the conference in person due to the martial law in Ukraine, as well as associated difficulty and hazard of moving.

Finally, the event was concluded with productive discussions and networking.

### 5.3. Follow-up

As an integral part of multiplier event we've conducted the evaluation survey of the participants on quality of event's organization and presented materials. The evaluation survey was performed by Google form. The link to online survey and screenshots of it are placed in the attachments. Evaluation form contained 8 questions to evaluate the event on a scale from 1 (worst rating) to 5 (best rating) and 1 open question about the comments and recommendations to the next events:

1. Logistic preparation and organization of the event – on a scale from 1 (worst rating) to 5 (best rating).
2. Format of the event's agenda – on a scale from 1 (worst rating) to 5 (best rating)
3. Arrangements of the event (venue, equipment, etc) – on a scale from 1 (worst rating) to 5 (best rating).
4. Duration and timetable of the event – on a scale from 1 (worst rating) to 5 (best rating).
5. Communication between the organizers of the multiplier event and the participants – on a scale from 1 (worst rating) to 5 (best rating).
6. Quality of presentations and other materials provided during the multiplier event – on a scale from 1 (worst rating) to 5 (best rating).
7. Clearness of the presentation of the coordinator regarding project goals, implementation – on a scale from 1 (worst rating) to 5 (best rating).
8. Opportunities to express your opinion and influence decisions – on a scale from 1 (worst rating) to 5 (best rating).
9. Comments and recommendations for the next multiplier event – open question.

We have obtained 56 responds to the event evaluation survey (Figures 8-15).

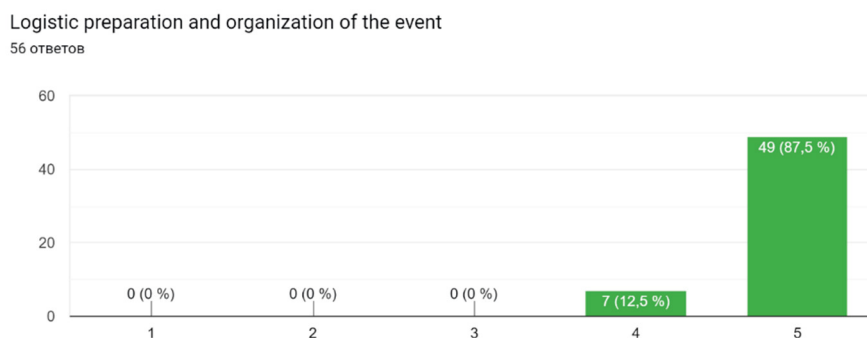


Figure 8. Results of the participants' survey on logistic preparation and organization of the event

Format of the event's agenda

56 ответов

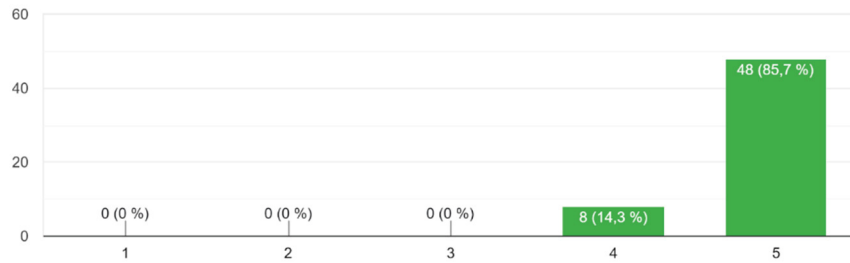


Figure 9. Results of the participants' survey on format of the event's agenda

Arrangements of the event (venue, equipment, etc)

56 ответов

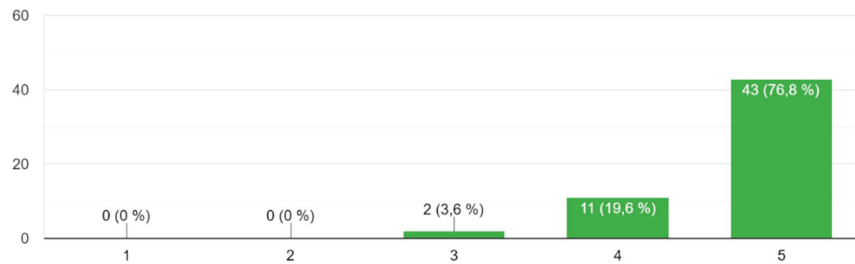


Figure 10. Results of the participants' survey on arrangements of the event (venue, equipment, etc)

Duration and timetable of the event

56 ответов

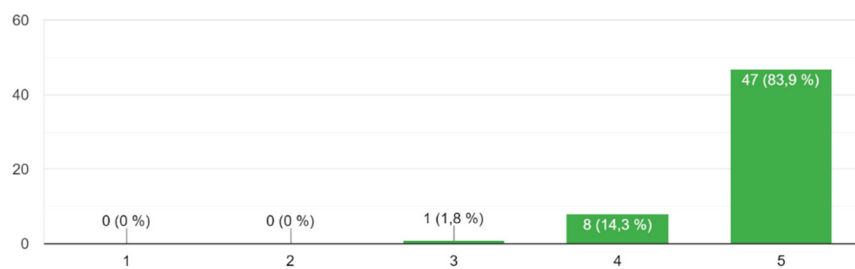


Figure 11. Results of the participants' survey on duration and timetable of the event

## Communication between the organizers of the multiplier event and the participants

56 ОТВЕТОВ

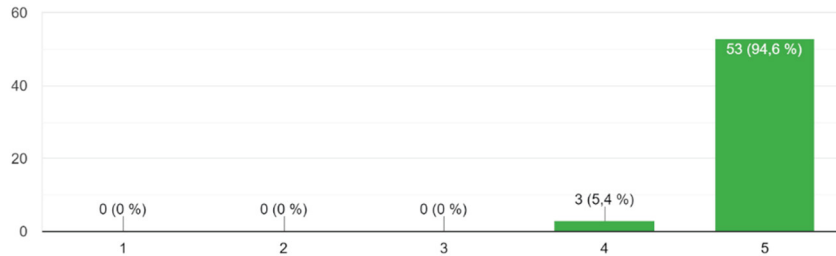


Figure 12. Results of the participants' survey on communication between the organizers of the multiplier event and the participants

## Quality of presentations and other materials provided during the multiplier event

56 ОТВЕТОВ

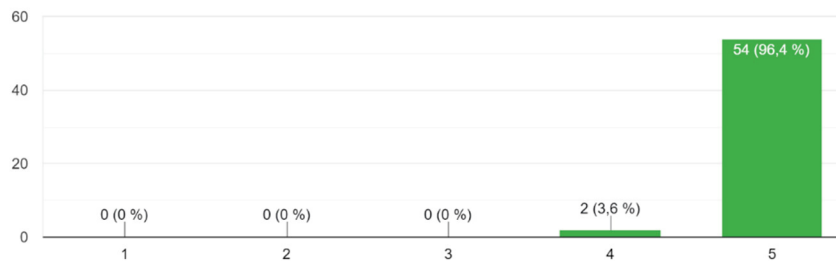


Figure 13. Results of the participants' survey on quality of presentations and other materials provided during the multiplier event

## Clearness of the presentation of the coordinator regarding project goals, implementation

56 ОТВЕТОВ

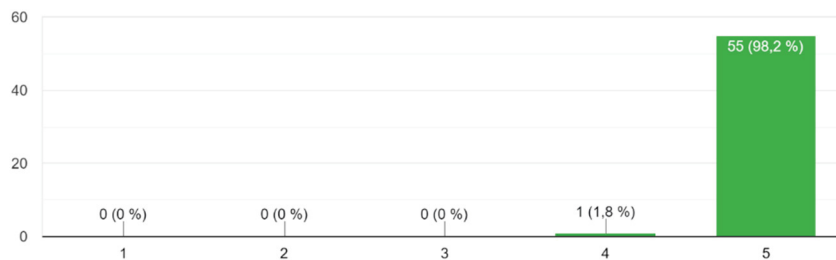


Figure 14. Results of the participants' survey on clearness of the presentation of the coordinator regarding project goals, implementation

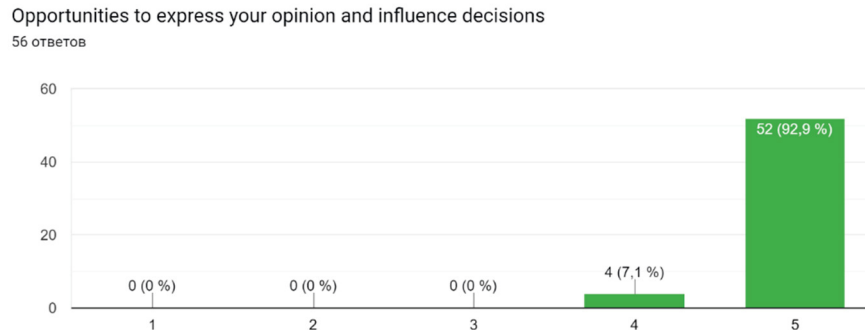


Figure 15. Results of the participants' survey on opportunities to express your opinion and influence decisions

Presentations of reports of E4 can be reached at [25]. Photo materials can be accessed at [26].

## 6. Conclusions

This work presented the results of the multiplier events, implemented under the Erasmus + project "Innovations for Big Data in a Real World" (iBIGworld) 2020-1-PL01-KA203-082197 as the dissemination and exploitation of results activities.

It was achieved the aim of communication to a wider audience consisting of stakeholders and members of target groups related to Big Data branch. The events also aimed to elaborate on all new perspectives and challenges in the sector that are identified by the European, academic, vocational and expert communities. The speakers were carefully selected in order to encompass an integrated view of all sectors, showing evidence of the interaction between them.

## Appendix 1

### Survey for E2

- How did you learn about the event?
  - Facebook
  - LinkedIn
  - Email
  - The website of the organizers
  - From a friend / colleague
  - Personal invitation
  - Something else: \_\_\_\_\_
- In general, how would you rate the event?
  - Excellent

- Very good
- Okay
- Average
- Weak

3. How useful was the content of your event?

- Extremely useful
- Very useful
- Somewhat useful
- Not so useful
- It was not useful to me

4. How interesting were the presented topics?

- Very interesting
- Somewhat interesting
- Not so interesting
- They are not interesting to me

5. Which session (s) did you like the most? Why?

Open question

6. Which session (s) did you like the least? Why?

Open question

7. Do you think that the presented results, materials and information will be useful to you?

- Yes
- No
- I can not decide

8. Do you have comments, questions or recommendations about the presented tools for start-ups and small companies and for medium and large companies?

Open question

9. In the future, we should increase the time for:

- Presentations
- Interactive sessions
- Contacts / Networking
- Discussions
- Something else:

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