



DELIVERABLE D.T2.2.3

Wave 2: Capacity building for associated and external BSO

Version 1
08 2021



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1. Introduction

This report summarizes the second wave of BSO capacity building, that was jointly developed and implemented by all project partners.

Deliverable D.T2.2.3 as defined in the Boost4BSO application form: ‘The second wave of BSO capacity building will be organized and implemented by PPs. The AP + ext. BSOs will undergo a mix of training settings (face-to-face, online), on all SME support instruments defined in A.T1.3, to scale up I4.0 innovations.’

Based on the key findings of implementing wave 1 as well as on the feedback of all partners, the partnership has discussed the content of the second wave capacity building.

Culmination of outcomes of the discussions and adaption to the pandemic situation have led to the conceptual & organizational preparation of wave 2 BSO capacity building (D.T.2.1.2 - part 2). Due to the pandemic, the partnership had to adapt the training methodology and decided to start with online training sessions in English language and to finalize the wave 2 of BSO capacity building with local sessions in native language.

Event 1 I4.0 opportunity assessment

Responsible: FINN

Date: 15. April 2021

Event 2 Understanding I4.0 technology implications

Responsible: FHOOE

Date: 22. April 2021

Event 3 Understanding I4.0 business implications

Responsible: STEP RI

Date: 29. April 2021

Event 4 Design of I4.0 transformation roadmap

Responsible: Biz-Up

Date: 6. May 2021

Event 5 Local workshop in native language, with knowledge exchange, discussion about Do’s and Don’ts, best/worst practices

June 2021

2. Implementation of capacity building wave 2

2.1. Common online training session framework

The project partners have invited their associated partners as well as 5+ additional BSOs from their region/country. The partnership faced a trade off: On the one hand, we wanted to spread the Boost4BSO toolbox to as many BSOs as possible, but on the other hand we had to define a max. number of participants for interactively elaborating use cases. We decided to invite max. 50 BSOs and to introduce a max. number of participants of 80, including the partnership.

The participants registered for each event and received an online link to participate in the sessions, which were held as Zoom - meetings, coordinated and supported by an external technical assistance, which was contracted by PP2 FINN.



As the number of online trainings has significantly increased during the pandemic, the partnership searched for a novel concept to increase the attractiveness of the capacity building wave 2 online sessions. Therefore, it was decided to introduce a **gamification approach**.

The following game regulations have been drafted by PP5 MESAP and agreed by the partners:

4 Teams

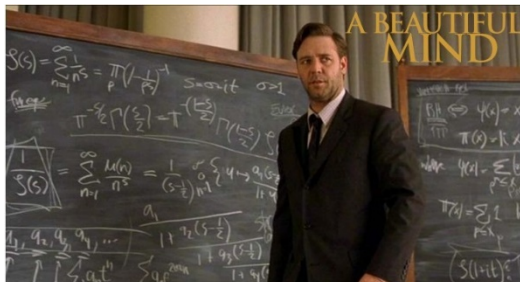
1-Science Squad



2-Bazinga



3-Beautiful mind



4-Fast and Curious



The four groups must be maintained along the four events, in order to keep continuity, motivations and to create team spirit. This also allows for a proper ranking of the performances and facilitates the dissemination among the PPs and all participants.

Scores

Each event will have a dowry of 50 points to be awarded to the teams, according to their performances during the events.

Every event should be organised in such a way that the teams will participate in the interactive sessions addressing specific issues, resolving situations or answering questions. The event coordinator will evaluate the performances, and will assign scores to each of the teams.

It will be up to the event coordinators the decision on how to split the 50 points, and the weights to be given to the interactive sessions.

At the end of the events' cycle, the best performing team will be the winner, encouraging the competition.



Prize

- A digital trophy for the winner's team
- Visibility in BOOST4BSO website/social/ PP social (a publishing plan based on interviews, the topics, the name of the teams...)
- BOOST4BSO Certificate (like a graduation parchment) NO legal values!
- BSOs invited at the Boost4BSOs final event (special slot?) + additional activities (e.g. networking with local BSOs, visit to companies...)

The four online sessions have each been split into the following parts

- knowledge transfer part,
- interactive part - elaborating a use case
- debriefing
- feedback questionnaire
- gamification - ranking

All participants joined the plenary knowledge transfer part via their individual Zoom-link and were then split into one of the 4 Zoom-breakout-rooms for elaborating the use cases. Each break-out room was moderated by 2 members of the project partners. Each team has chosen a team leader who acted as speaker of the team in e.g. a quiz, and presented the results of the use case elaboration to the audience in the plenary debriefing part. The knowledge expert(s) had access to all 4 breakout-rooms to observe the progress of work of the teams as well as to give assistance if questions occurred.

While the organizers and the knowledge expert assessed the teams' contributions (quiz, presentation of use case, ...) the participants filled in the feedback questionnaire, which was implemented online, in MS forms (see D.T.2.2.5). Finally, the organizer presented the ranking of the 4 teams and closed the session.

Prior each online session the partnership, in particular the organizer and the 8 moderators held coordination and briefing sessions with the experts to fix the agenda, to agree on the distribution of points during gamification, and to be prepared for the guidance of the teams.

Each online session had a duration of approx. 2 hours and 45 minutes.

The 4 online sessions were recorded and are available as YouTube-videos via the project website <http://interreg-central.eu/Content.Node/Boost4BSO.html> and the knowledge transfer platform <https://boost4bso.eu>



2.2. Session 1 - I4.0 Opportunity assessment

The first session of the second wave of Boost4BSO capacity building took place on 15th April 2021.

First, the participants were introduced to the project and the aim of the Boost4BSO capacity building was described. Then, the agenda and the gamification approach were presented in detail.

Detailed agenda:

Time	Activity
2:00 - 2:15	Introduction Eva Breuer, Biz-Up - welcome speech and presentation of Capacity Building Wave 2 Saverio D'Eredità, FINN - presentation of the agenda Marco Mangiantini, MESAP - Presentation of gamification approach
2:15 - 2:35	VDMA: theoretical session Mr. Ralf Wiegand - Senior Project manager: Institut der deutschen Wirtschaft Köln Consult GmbH
2:35 - 2:40	Ice breaking quiz
2:40 - 3:00	VDMA: analytical of a real case Mr. Ralf Wiegand - Senior Project manager: Institut der deutschen Wirtschaft Köln Consult GmbH
3:00 - 3:05	Break!
3:05 - 3:40	Assessment simulation Teams
3:40 - 3:50	Methodology quiz Teams
3:50 - 4:05	Presentation by the teams (including "take home messages") Team leaders
4:05 - 4:35	Debriefing Mr. Ralf Wiegand
4:35 - 4:40	Feedback questionnaire
4:40 - 4:45	Ranking



The first session, co-organized by Friuli Innovazione and MESAP, was dedicated to the use of a Industry 4.0-Readiness tool, developed by the German Engineering Federation - VDMA and available for free online. It consists of 36 questions and is mainly aimed at companies from the mechanical engineering and manufacturing sector and more than 9,500 companies have completed it so far.

The tool is designed to assess the I 4.0 maturity level of a company based on the 6 dimensions of innovation:

- strategy and organization
- smart factory
- smart operations
- smart products
- data--driven services
- human resources.

The webinar was coordinated by Mr. Ralf Wiegand, expert from the Cologne Institute for Economic Research Consult GmbH - IW Consult, who contributed to the development of the Industry 4.0 readiness tool together with VDMA.

More than 40 experts belonging to BSOs and Central European clusters participated in the workshop and worked on concrete case studies by simulating the assessment of a company based on 4 proposed scenarios. During the session, working groups participated in gamification activities aimed at creating a collaborative spirit within the groups.

The assessment of the degree of I 4.0 maturity is the first step to be taken to start the business transformation process and is extremely useful for identifying areas for improvement, as well as the strengths and weaknesses of a company.

Gamification:

For the 1st event the score was split into 3 main sections:

- Quiz on VDMA 15 points max
- Assessment 30 points max
- Take-home message 5 points max



Impressions of Session 1

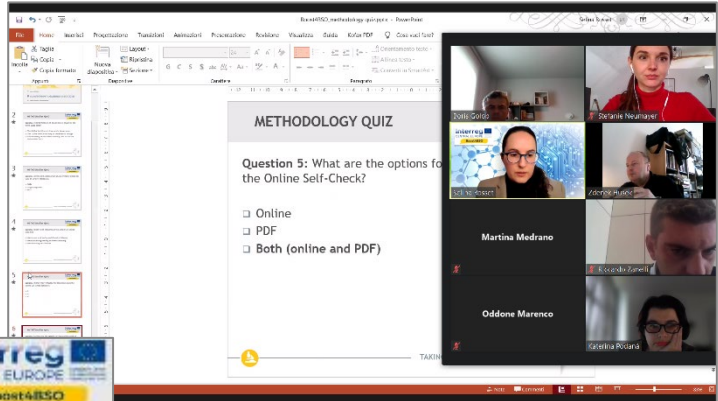


Readiness model

- The assessment of Industry 4.0 readiness and capabilities is based on a readiness model that was developed exclusively in the course of the study
- The model is based on the six essential dimensions of Industry 4.0

*Figure 2: Dimensions and associated fields of Industry 4.0
Source: Impuls/VDMA Study 'Industry 4.0-Readiness', October 2015*

iwCONSULT





2.3. Session 2 - Understanding I4.0 Technology implications

On April 22nd, the second session of our wave 2 took place, focusing on understanding Industry 4.0 technology implications. The agenda was structurally similar to the one from the first online session.

BSOs were invited to listen to the input of two experts, Mr. Harald Weigold and Mr. Jörn Linke from ITQ GmbH/Germany, who helped them identify I4.0 tech blind spots and challenges, which occur when implementing I4.0 projects. The second session was organized and hosted by PP9 FH Oberösterreich.

By the help of a case study, BSO participants were asked to develop recommendations for an industrial company, aiming at introducing an IoT-platform.

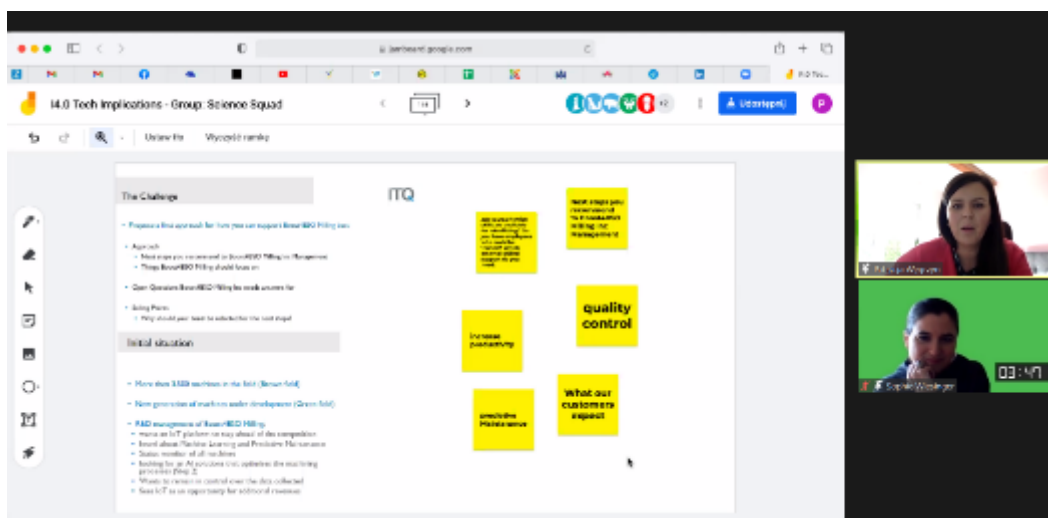
More than 50 experts belonging to BSOs and Central European clusters participated in the workshop and worked on the use case where they had to develop recommendations for an industrial company aiming at introducing an IoT-platform. During the session, working groups participated in gamification activities aimed at creating a collaborative spirit within the groups.

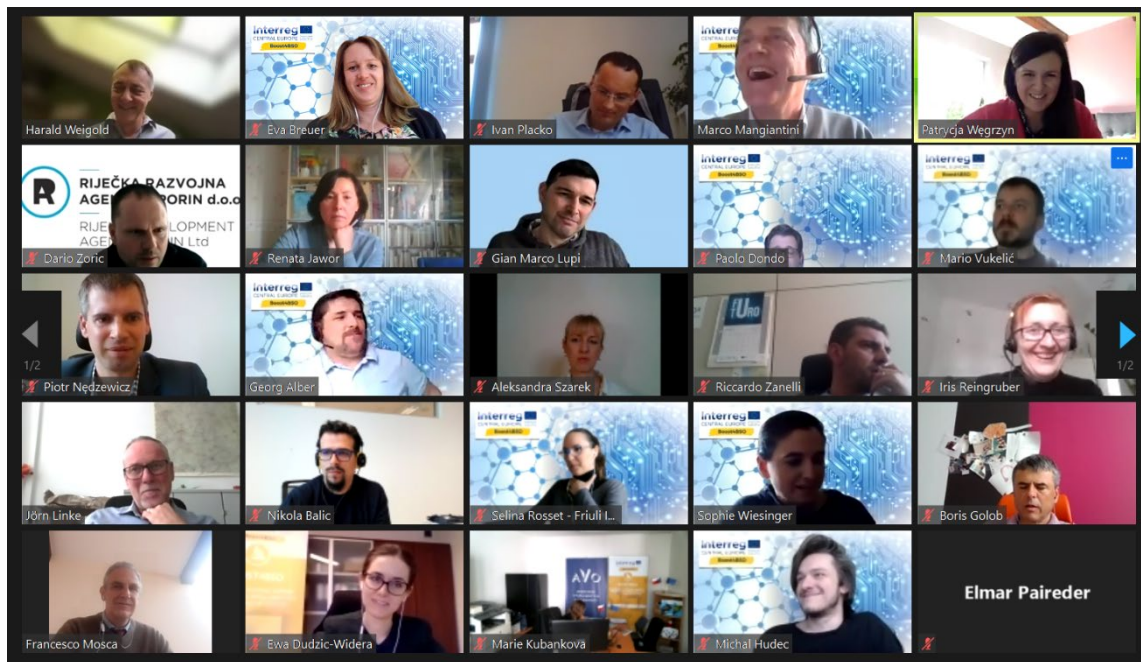
The assessment of technology implications is an important step to be taken after the evaluation of company's maturity and readiness to adopt Industry 4.0 technologies. It can be taken in conjunction with business implications assessment, in order to fully support the transformation process.

Different to the first session, the max. points for the competition (gamification approach) were solely charged for a 5 min elevator pitch summarizing the main findings from the use case elaboration and were distributed as follows.

- Number of topics mentioned: 20 points max.
- Customer-Group orientation 20 points max.
- Time management 10 points max.

Impressions of Session 2





The winner of the second session was the team “Bazinga”.

2.4. Session 3 - Understanding I4.0 Business implications

On April 29th 2021, the third session of capacity building for business support organizations was held, this time with the focus on the business implications that occur during adoption of new technologies by the companies aiming to improve their business.

The aim of this session was to present tools and methods that allow the assessment of opportunities, challenges, risks and change requirements regarding business model, strategy and organisation of the company that wants to introduce new technologies into its business and transform towards Industry 4.0.

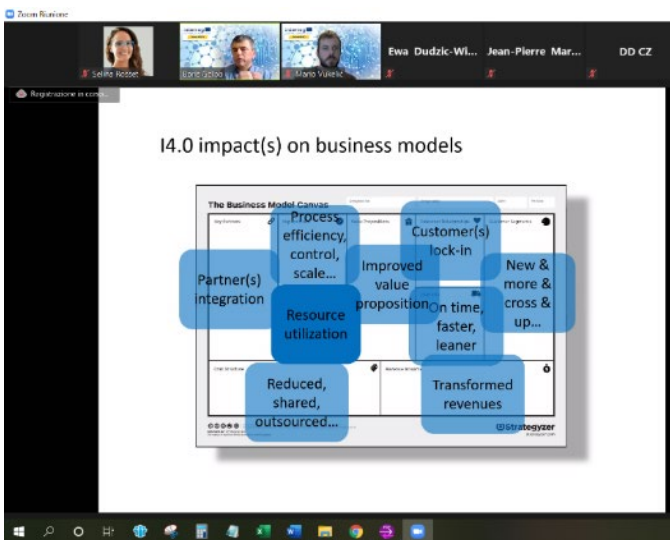
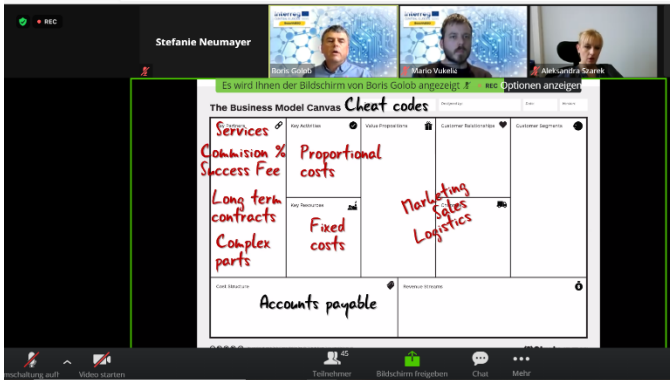
The webinar was held by Mr. Boris Golob, consultant and CEO of STEP RI Science and technology park of the University of Rijeka, who is specialized in business model innovation and servitization.

More than 50 experts belonging to BSOs and Central European clusters participated in the workshop and worked on the use case by simulating the assessment of challenges and change requirements for a company transforming towards Industry 4.0. During the session, working groups participated in gamification activities aimed at creating a collaborative spirit within the groups.

The assessment of business implications is an important step to be taken after the evaluation of company’s maturity and readiness to adopt Industry 4.0 technologies. It can be taken before or after the technology implications assessment, depending on the case, in order to fully support the transformation process.



Impression of Session 3



The use case described the situation of a fictional furniture company, which intends to improve its business model, strategy, and organisation and structure. The 4 teams were asked to write down specific topics and relevant questions that need to be discussed with the company, enabling assessment of opportunities, challenges, risks and change requirements as basis for the intended improvement.

The 4 groups were given a maximum of 40 points for qualified questions for enabling the assessment of the three topics business model / strategy / organisation and structure.

The remaining max. 10 points were given to that group with the most insightful, out of the box, mindful, useful, original... questions:

- The very best questions group ... 10 points
- Almost best but runner up group ... 5 points
- Very good but not that good group ... 3 points
- The most promising for improvement group ... 1 point

The winner of the third session was the team “Science Squad”.



2.5. Session 4 - Design of I4.0 Transformation roadmap

On May 6, 2021, the last of the 4 online sessions of the 2nd wave of Boost4BSO capacity building and knowledge transfer took place, focusing on Industry 4.0 transformation roadmaps.

The goal of this meeting was to provide the participants with a method for creating a roadmap and also to let them carry out the first steps for elaborating a roadmap themselves based on the methods and opportunities they had learned in the previous three workshops of Wave 2.

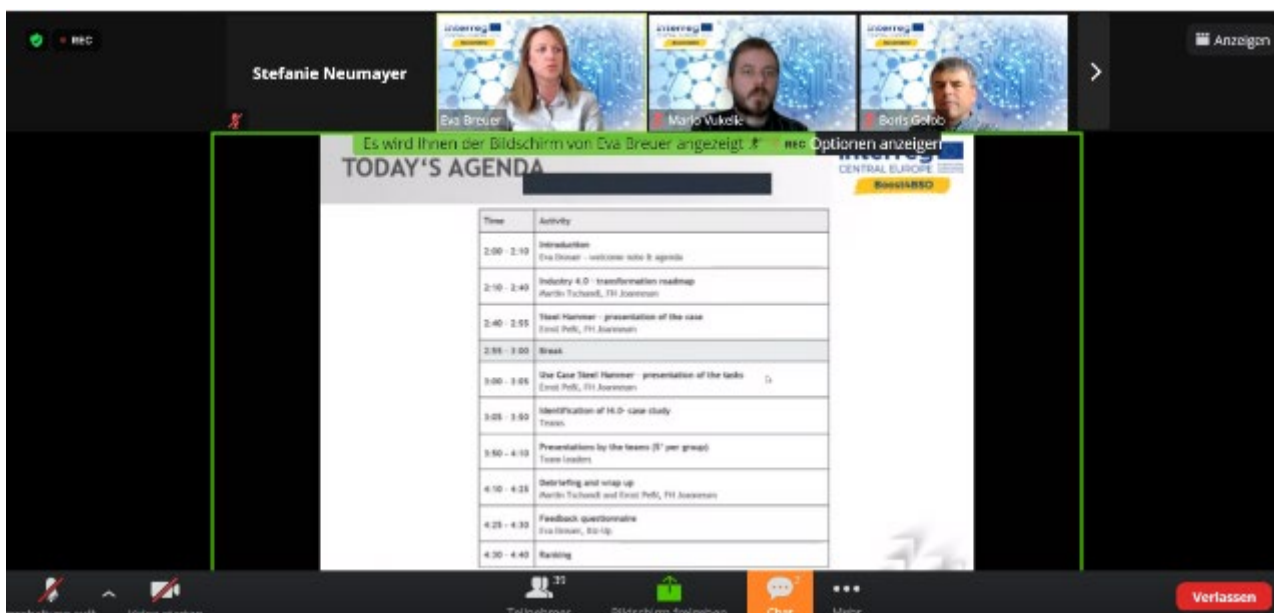
This final round of Wave 2 was organized by Business Upper Austria, which involved the two experts from FH JOANNEUM - University of Applied Sciences in Kapfenberg, Prof. Dr. Martin Tschandl and Dipl.-Ing. (FH) Ernst Peßl, to introduce the key aspects to the participants.

In their input, the two experts presented the **I4.0 roadmapping process** developed by FH Joanneum, which also includes a similar tool for maturity assessment as the VDMA maturity model from the first session of Wave 2. Using this maturity model, the current **status of the I4.0 maturity level** in various areas of a company is surveyed and the **target levels** are then defined as goals.

The next logical step in the roadmapping process is to elaborate and prioritize **concrete measures to close these gaps**. This step was carried out in a workshop, using a fictitious example of a maturity survey that had already been done in a real use case. More than 40 participating experts from BSOs and Central European elaborated in 4 groups measures for the two pre-defined areas “Maintenance and repair” and “Production control and traceability”. The target was to derive at least three measures, to prioritize them and to name the biggest challenges that arose during the process. The **measures and their impact on the business area** were presented to the plenum. The content work, as well as the pitches, were subsequently evaluated by the experts.

In the real company, the measures would have been presented to the **management body of the company**, who would have used this information to make the **decision about the implementation** (or dismissal) of the 3 suggested measures and initiate the according **transformation projects**.

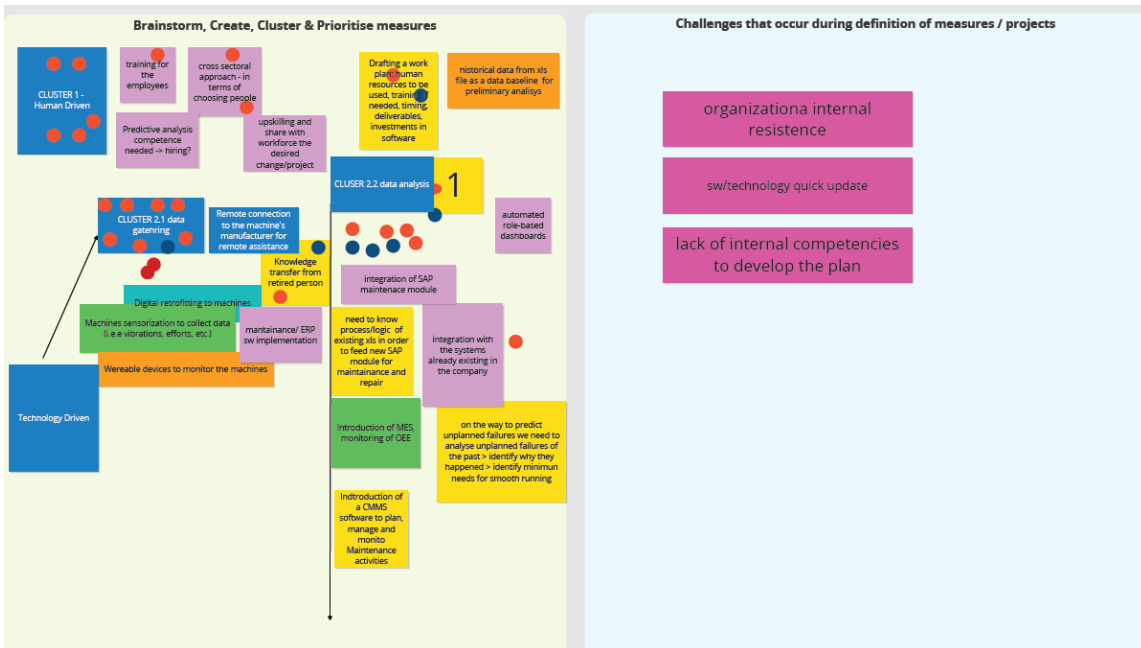
Impressions of Session 4



The screenshot shows a Zoom meeting interface. At the top, there are three video thumbnails for participants: Eva Breuer, Mario Wukelic, and Boris Golob. The main screen displays a presentation slide titled "TODAY'S AGENDA" with the following content:

Time	Activity
2:00 - 2:10	Introduction Eva Breuer - welcome note & agenda
2:10 - 2:40	Industry 4.0 - transformation roadmap Martin Tschandl, FH Joanneum
2:40 - 2:55	Steel Hammer - presentation of the case Ernst Peßl, FH Joanneum
2:55 - 3:00	Break
3:00 - 3:05	Use Case Steel Hammer - presentation of the tasks Ernst Peßl, FH Joanneum
3:05 - 3:50	Identification of I4.0 - case study Tristan
3:50 - 4:10	Presentations by the teams (3' per group) Team Leaders
4:10 - 4:25	Debriefing and wrap up Martin Tschandl and Ernst Peßl, FH Joanneum
4:25 - 4:30	Feedback questionnaire Eva Breuer, BSO-UP
4:30 - 4:40	Ranking

At the bottom of the screen, there is a navigation bar with icons for "Teilnehmer" (23), "Bildschirm freigeben", "Chat", and "Mehr". A red "Verlassen" button is visible in the bottom right corner.



The 4 groups were observed by the 2 experts during the interactive elaboration of the case study in Conceptboard. For that part max. 30 points could be reached.

For the presentation of the results each group could reach a max. of 20 points. Once again, the group “Science Squad” was the winner.

Finally, the scores of all sessions were added up ...





PP5 MESAP created a short movie for the presentation of the winning team.



2.6. Session 5 - Local workshops

In each project region, the PPs organized a workshop and invited their local BSO participants of wave 2 capacity building online sessions.

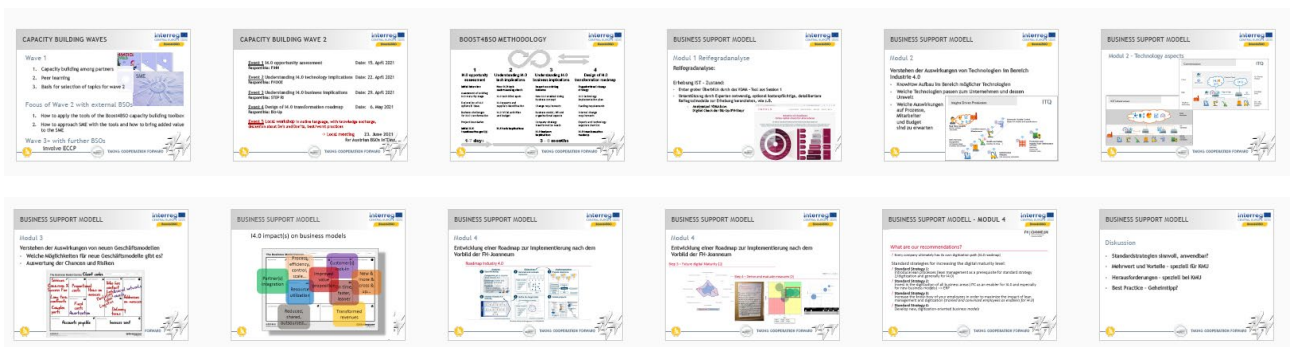
This 5th session was held in native language, in June/July 2021.

2.6.1. Austria

LP Biz-Up and PP8 FH OÖ invited their local BSOs to the fifth session of the second wave of BSO capacity building. As the attendees from Vorarlberg and Tirol asked to implement the session as online meeting, we scheduled an MS Teams meeting for the 23rd June 2021.

The participants were from WISTO (Vorarlberg), Standortagentur Tirol, and Plattform Industrie 4.0, and Mechatronik-Cluster.

The agenda included a recap of the project objectives and the 4 online sessions of wave 2. Then the participants started the discussion about the challenges of SME, their I4.0 opportunities and the key findings from previous SME support activities.



The main aspects that were mentioned during the discussion:

- Trust is essential, when cooperating with SME. BSO should use clearly understandable terms, not too many specialist/technical terms. The approach should be on a low threshold level.
- The BSO should try to take away the fear of the SME of new technologies, processes, ... and clearly show the opportunities and possible benefits of transformation activities.
- SME should start with smaller projects, with quick wins, to get acquainted with transforming their company with introducing and applying new digital technologies, processes or tools, e.g. analyse which data already exists and elaborate beneficial use of it.
- BSO should choose a structured approach when supporting an SME and start with an easy to follow approach, e.g. analyzing the different fields of the company - current status and target value as starting point (see spider diagram of session 4)
- SME appreciate when they are supported by an independent BSO, who has no need to sell any product and who does not intend to become irreplaceable for the company (consultant lock-in)



2.6.2. Italy - Friuli Venezia Giulia

Friuli Innovazione invited local BSOs to the fifth session of the second wave of BSO capacity building. As the attendees from ART-ER (Emilia-Romagna Region) were not available for an in-presence meeting, Friuli Innovazione scheduled a hybrid online-offline meeting, using GoToMeeting platform, on 23rd June 2021.

The participants were from DIH - Digital Innovation Hub/Confindustria Udine, COMET (AP) and also ART-ER members were invited.



The agenda included a recap of the project objectives, of the 4 Wave 2 online sessions and of the lessons learned from the Capacity Building process. Then the discussion continued focussing on next steps, namely: the pilot action, the methodology to use during D.T3 activities and the action plans to be developed. Then the participants started the discussion about I4.0 opportunities and future activities to address SMEs needs in the I 4.0 framework.

BOOST4BSO

- FH OÖ** University of Applied Sciences Upper Austria - Faculty Steyr
- AVO** Association of research organizations
- SA-AM** Silesia Automotive & Advanced Manufacturing Cluster at Katowicka special economic zone
- Biz-Up** Business Upper Austria - Mechatronics Cluster
- BI-CMAB** Bayern Innovativ - Cluster Mechatronik - Automation Severla
- STEP RI** STEP RI science and technology park of the University of Rijeka
- MESAP** Innovation Cluster Smart Products and Manufacturing
- FINN** Friuli Innovazione - Research and Technology Transfer Centre
- KOT 4 INDUSTRY**

TAKING COOPERATION FORWARD

CAPACITY BUILDING WAVES

Wave 1

1. Capacity building among partners
2. Peer learning
3. Basis for selection of topics for wave 2

Focus of Wave 2 with external BSOs

1. How to apply the tools of the Boost4BSO capacity building toolbox
2. How to approach SME with the tools and how to bring added value to the SME

Wave 3+ with further BSOs involve ECCP

TAKING COOPERATION FORWARD

STRUCTURE OF THE CALL

- I. INTRODUCTION
- II. AIM OF THE CALL
- III. REQUIREMENTS
- IV. SELECTION PROCEDURE
- V. HOW TO APPLY
- VI. DEADLINE
- VII. CONTACTS

TAKING COOPERATION FORWARD



The main aspects that were mentioned during the discussion:

- The methodology proposed during the Capacity Building wave was, for some, a useful recap of the most important instruments and approaches to I 4.0 consultancy, for others it consisted in a new methodology which will be used for supporting SMEs in their I 4.0 evolution process.
- The Pilot Action will be an opportunity for BSOs both to test the new methodology proposed and to offer a useful service to local SMEs, supporting the enterprises in understanding the benefits of I 4.0 transformation.
- Due to the number of local consultants proposing assessment activities, it will be necessary to let enterprises know that the Pilot Action differs from what the market already offers and that the support it is not related to service selling.
- Also, the call for proposal was analysed in detail, to help local BSOs considering what kind of support they can provide during the Pilot Action implementation.

2.6.3. Italy - Piemonte

MESAP decided to organise face-to-face meetings with the BSOs that attended the Wave2 events, since the overall pandemic situation, even if the emergency is slowing down, suggested to still keep them still in a virtual modality.

The meetings have been organised in the week 5-9 July 2021.

The participants were from DIHP, Unione Industriale Torino and Po.In.Tex (the regional Textile Innovation Cluster).

The discussion has been carried out starting from the 4 sessions' issues, analysing not only the topics that have been treated and their usefulness, but also trying to detect how they could be efficiently vehiculated to the SMEs.

The main aspects that were mentioned during the discussion:

- The external BSOs appreciated the overall methodology: relatively brief technical presentations, and good sessions in which the messages have been elaborated through tests and collaborative activities.
- The external BSOs appreciated the supporting path: the assessment of the industry 4.0 readiness has been evaluated as a good tool that allows SMEs to better understand their state of play. Also the transformation roadmap has been appreciated, since it's a typical situation that SMEs experience during a digital transformation process.
- BSOs appreciated the VDMA METHODOLOGY to split the chain into single steps, showing up future roads for development step by step. It offers a comprehensive overview on the state of the art, helping small companies to understand the complexity of the production (general vision) and to harmonise them.
- The awareness actions are important: however, the support in the implementation phase is equally, if not more, important. Tutoring services, according to the SME specific needs, are another piece of the puzzle to be strongly considered.



- Some well-focused training courses could improve SMEs level of knowledge: it will be useful for small companies that usually lack the general vision/strategy due to the operative daily activities focus.
- BSOs cannot have 360° experience or competence on all the issues dealing with the digital transformation: the wave 2 events have been useful for improving the knowledge.
- BSOs should be able to stress the potential benefits (not only financial) produced by the I4.0 implementation: most of the SMEs are not aware of, and consequently they do not know they could need it.



Figure 1 MESAP team with Oddone Marengo of DIHP

During the meetings, we took the occasion to explain the opportunities of the “call to action” to companies (Service Support) and to commit those stakeholders in this activity (dissemination, synergies..)

2.6.4. Croatia

Croatian partner STEP RI Science and technology park of the University of Rijeka organized the local workshop on June 10th 2021. The event was held in person in the premises of STEP RI, in line with Covid-19 prevention measures. Representatives of 4 Croatian BSOs joined the training in person and 1 was participating online via Zoom platform, since he was unable to travel to Rijeka (Technology Park of the University of Split).

The event was organized in combination with the BSO networking event in order to further strengthen the collaboration between BSOs and the joint standardized approach they will implement with SMEs.

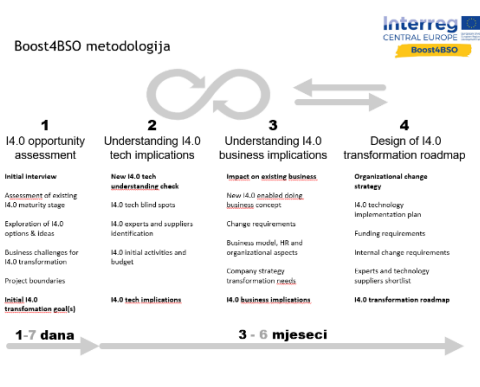
Organizations that participated in the workshop were ZICER from Zagreb, BIOS from Osijek, TICM from Čakovec and Technology Park of the University of Split. Representative of PORIN from Rijeka was unable to attend the local workshop on June 10th due to schedule conflict, so an additional session was held for him on June 14th.

During the workshop, the BSOs went through the summary and discussion about each of the main phases of the support program that is going to be implemented with SMEs. These phases were also the subject of the previous online sessions of wave 2. After the recap of each phase, an open discussion was held, covering the activities and methods that should be conducted.



STEP RI is going to implement the SME pilot phase jointly with the attending BSOs. It was agreed among the participants that:

- all BSOs would use the VDMA I4.0 readiness questionnaire at the beginning of the support program, while the tools and methods for the other 3 phases could slightly differ, depending on the competences of the BSOs' employees and needs of the companies they will work with.
- the support program will end with all BSOs preparing the action plan for the SMEs in standardized format, that will help them efficiently integrate Industry 4.0 technologies into their business.
- The overall implementation of the support program should not disrupt the business activities of the SMEs, therefore all meetings and workshops will be adapted to the pace of work of the SMEs
- STEP RI will provide constant support to the associated and external BSOs during the pilot actions, and participate in joint meetings and workshops with SMEs.



All participants further discussed the support measures towards SMEs needed for their transformation towards Industry 4.0, according to the Boost4BSO approach.

2.6.5. Poland

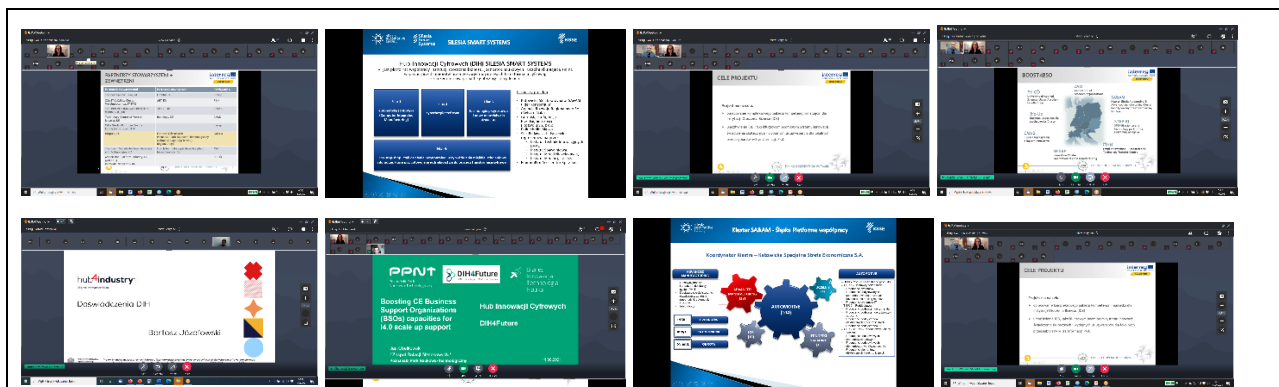
PP 6 SAAM invited their local BSOs to the fifth session of the second wave of BSO capacity building. Due to the ongoing threats of COVID-19 transfer during the physical meetings the session was organized as an online meeting. Accordingly, the follow-up regional meeting for Polish BSOs took place online on 11th June 2021 via GoToMeeting.

The session was attended by 19 participants, representing Krakow Technology Park, Poznan Science and Technology Park, Upper Silesian Fund, Polish Automotive Group, Upper Silesian Accelerator for Commercial Enterprises Ltd. (former name: Upper Silesian Agency for Entrepreneurship and Development), Science and Technology Park "Świerk", Foundation for the Development of the Lublin Region, Gliwice Science and Technology Park, Bielsko-Biała Regional Development Agency and PP6 SAAM staff.

The agenda included a presentation of the project goals and activities and presentation of the cluster's activities in the area of Industry 4.0. Moreover, the snowball mechanism approach was elaborated on and the process and content of capacity training sessions presented. Following the introductory part, the two representatives of digital innovation hubs contributed with practical information and lessons learned from their activities in supporting the digital transformation process in companies. The third part of the regional



meeting was dedicated to questions and answers and a discussion on the standardisation of supporting tools in the digital transformation process.



The main aspects that were mentioned during the discussion:

- The participants in the meeting recognised three groups of SMEs, namely: (1) companies that are aware of the fact that they lack something and they are open for input from outside; (2) companies that are aware of the challenges, but think they know what they want to face them, but are hardly open to listen to the proposals of external consultants; (3) companies that are advanced in digital transformation and have specific ideas or projects that are characterised by R&D activities and deep technological knowledge. The most interesting groups to work with are 1 and 3, but again cooperation with group 3 companies enters very quickly in specialised discussions for which the consultant of the digital innovation hub requires the support of additional experts. More important than the technical progress so far made in a company, is the company's organisational culture and its experiences related to democratising the decision making process and the innovation culture.
- The process is more or less the same in each digital innovation hub. Important is not to stick too much to one methodology, but to have a set of tools ready that can help reaching the goal, that is to define the digital transformation strategy or new business model for that specific client. The first step is to do an analysis of the current situation. Experts suggested to involve at least 3 employees (HR, IT, production, management) in the filling in of a questionnaire. Additionally they pointed out that an introduction should be organised to explain the main points in the questionnaire since information included is often technically specific and not always clear for all. One good practice showed that after having provided the analysis in a smaller group, the presentation of the outcomes and their discussion in a wider group of employees resulted in a brainstorm session with lots of practical ideas coming from the lower levels of the company. Also this session allowed to formulate shortcomings in competencies and to justify the need for specific trainings. Some DIH provide the short version questionnaire online and a longer version during individual interviews in the company. Others do the short and the long version online and then provide a workshop to discuss the answers. This to have a more time-efficient approach. Also some questions of the digital maturity assessment forms are being adapted to the specific characteristics of the branch the company is active in.



- For what concerns standardisation, the participants observe a variety of courses and trainings organised by technology suppliers, business support organisations as well as research organisations and universities. On the other hand experience shows that companies are hardly interested to send their personnel to trainings or courses. Rather it are the employees that seek these offers in order to strengthen their competencies on the labour market. The participants are concerned that calls for proposals related to digital transformation will be too much technology focussed with little space for discussion on business models and organisational cultures. Also digital transformation should not only be seen through industrial technologies. There are many companies thinking about including digital technologies to improve HR management, relations with clients and suppliers, deliver intelligent services.
- Although specific support services should be directed to SMEs, most attention goes out to medium sized and large companies that have already some track record. They often know what and why that want and use the support service to get a second opinion and to reflect on growth scenario's. However cooperation with the smaller companies is time consuming and most of them are not ready to take the next step. They still face organisational challenges and need to jump first from Industry 2.0 to Industry 3.0 (basic automation, MES, ERP).

2.6.6. Czech Republic

AVO invited their local BSOs to the fifth session of the second wave of BSO capacity building. On the 2nd July AVO organized the 5th national workshop organised in the 2nd wave.

AVO invited representative of BSOs who participated in the previous workshops of 2nd wave:

- Klastř MECHATRONIKA
- Association of aircraft suppliers
- Science and Technology Park Celakovice
- Science and Technology Park Dobruška
- Science and Technology Park Brno

The agenda consisted of 3 key topics:

- Participants discussed takeaway messages
- National challenges concerning I4.0
- Conclusions

The main aspects that were mentioned during the discussion were:

1. Feedback from the wave 2
2. National challenges



Ad 1) Participants provided both positive comments and express the acquired skills and knowledge and also negative comments that were very valuable and important for the further exploitation. The most important messages are summarized below:

The topic was very interesting, it was especially a great inspiration for us from others, how they approach the topic, what they had some experience with.

What we really appreciated were the remarks and practical experience. A given company may think that the implementation of I4.0 will solve all the problems. However in reality the customer expects the efficiency of sensors and other equipment, so it's not that simple. Another valuable finding is the required time that needs to be invested in the business model development. And I really appreciate the use of "cheating words" at Business Canvas - so far all previous trainings have been worked on professionally (this was the "aha" moment).

We appreciate the dynamic approach of the organizers and the overall processing of presentations, overall we evaluate the training positively.

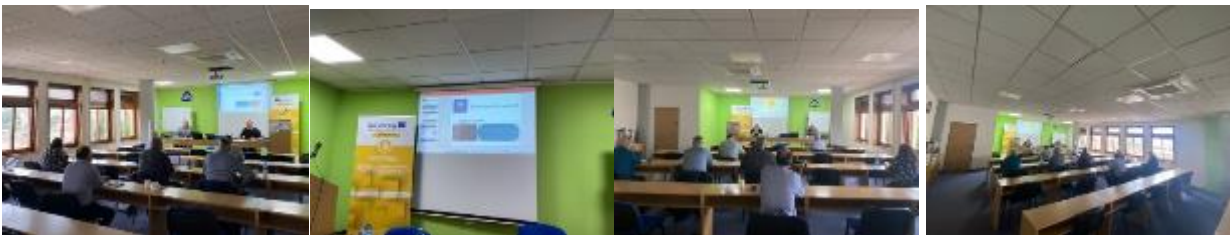
Negative comments:

We would have appreciated to introduce the team players on the very first workshop, this was provided on the second one though. Likewise the project was not properly presented on the first but on the second workshop. I would also recommend to dedicate more time for the workshop itself rather than the team work. We were forced to master the technical side of all the on-line tools while learning the content itself. That is a bit challenging. On the other hand, I was completely lost in the last workshop, I do not understand the topic professionally at all, "I am unable to deliver this kind of consultancy to a SME without a professional consultation". We will suggest to dedicate more time for the lectures and less for the team work.



Knowledge application:

We will certainly use a new approach to business canvas. I find the questionnaire presented in the first workshop as very practical, too. 1st workshop - at least as a recommendation before the company decides to contact someone to automate it. And what we really like was the conclusion of the last workshop; it was considered said out loud that the human factor must not be forgotten. Systems are one thing, but we must also have people who are able and willing to work with them. We have already encountered that the human factor is critical in societies.



Ad 2) The implementation of Industry 4.0 concept among SMEs is slowly progressing in the Czech Republic. There are a few problematic issues that slow down the process of digitalisation among SMEs, particularly strategic management and managerial methods. Participants discussed the need for tailored methods for SMEs.

There are however a few good practice of digitalisation in SMEs that can be shared, f.e. FULLY AUTOMATED ASSEMBLY LINE OF AIR FILTER PATRONS or robotic light installations.

2.6.7. Germany - Bavaria

Cluster Mechatronics & Automation invited their local BSOs to the fifth session of the second wave of BSO Capacity Building. The session was held the MS Teams Meeting on 28 June, 2021. The participants came from the Technology Centre West Bavaria, the Technology Centre Augsburg and from the Technology Support Cham/District Upper Palatinate.

The programme included a presentation of the project goals and the online sessions of wave 2, followed by a joint discussion on the questions of how the digitisation of SMEs will continue to develop and how companies can be supported in this process:

- BSOs should not assume prior knowledge
- BSOs should not create fears, but rather point out opportunities
- BOSs should identify and communicate successful lighthouse projects that have proven themselves in practice
- However, BSOs should not give the impression that they serve as a marketing platform for successful Industry 4.0 companies
- BSOs should identify strategies for finding and developing suitable employees.



- BSOs should provide SMEs with an overview of the key technologies of digitalisation.
- BSOs should show new business models, e.g. by means of best practices.
- In addition, they should show tools for identifying, collecting, processing and interpreting data for digital business models
- BSOs should also provide assistance in building complex service system ecosystems.
- A visualisation of company-specific digital transfer projects is very helpful.

3. Summary

The main aim of the second wave of Boost4BSO capacity building was to train the associated and external BSOs on

- how to apply the tools of the Boost4BSO capacity building toolbox,
- how to support the local SME during their digital transformation process and to bring added value to the SME

Therefore, the second wave of capacity building was implemented with knowledge transfer about the tools, facilitated by experts, and interactive testing and discussion of the Boost4BSO tools in 4 online sessions.

In 3 of the 4 sessions, external experts transferred their know-how to the participants, while in 1 session the responsible partner acted as expert.

In total, **36 BSOs** (clusters, innovation agencies, incubators/accelerators, sectoral agencies, interest groups, etc.) from **Austria, Germany, Poland, Italy, Croatia and Slovenia** participated in the 4 online + local sessions of the second wave of capacity building, together with the 8 project partners. On average, 40 persons participated in each of the 4 online-sessions about:

- Assessment
- Technology implications
- Business implications
- Transformation roadmap

Finally, local sessions were organized by each project partner, in order to discuss with their local BSOs about regional characteristics of digital transformation aspects, needs of SME and lessons learnt from previous SME support with best/worst practices.



The main findings were:

- The methodology proposed during the Capacity Building wave was, for some, a useful recap of the most important instruments and approaches to I 4.0 consultancy, for others it consisted in a new methodology which will be used for supporting SMEs in their I 4.0 evolution process.
- The dynamic approach of the organizers and the overall processing of presentations was very much appreciated by the external BSOs.
- The process is more or less the same in each SME support towards digital transformation. Important is not to stick too much to one methodology, but to have a set of tools ready that can help reaching the goal, that is to define the digital transformation strategy, technological improvements, or a new business model for that specific client.
- The BSOs recognised three groups of SMEs, namely: (1) companies that are aware of the fact that they lack something and they are open for input from outside; (2) companies that are aware of the challenges, but intend to solve them internally, and are hardly open to listen to the proposals of external consultants. One reason for that behaviour could be that SME fear a “consultant lock-in” (once you involve a consultant, you will have to stick to that consultant). Another reason is that some SME do not trust externals regarding non-disclosure ; (3) companies that are already advanced in digital transformation, but still have some “blind spots”, e.g. the production lines are already digitalized, but the business models need to be adapted to exploit all generated data, and/or to provide new services.
- There is a considerable gap between large and medium enterprises on the one hand, who have already entered Industry 4.0 and on the other hand small enterprises which are at the very beginning.
- More important than the technical progress so far made in a company, is the company’s organisational culture, and the innovation culture. The factor “human” becomes more important when approaching digitalization: Systems are one thing, but SME must also have people who are able and willing to work with them.
- Organizational changes in a company have to be considered, e.g. needed due to the growth of a company, from a patriarchy scheme in a small company (the founder/owner decides everything) to a more democratic or distributed decision making process in a medium sized company.
- A further challenge is the strategy development, as the strategic orientation of a company is the basis for further development steps, either in product/process improvement and/or in business conduct.

4. Annex

All presentations and supporting documents that were shown during the 4 online + local sessions are attached as Annex, and also available on the knowledge platform <https://boost4bso.eu>