

Restart Toolbox Test

O2-R3: Malta National Report

MECB Ltd.

23rd July – 27th September 2019



Co-funded by the
Erasmus+ Programme
of the European Union

PROJECT:

Restart - Digital Training Toolbox to Foster
EU'S IndusTry 4.0 RevoluTion

www.restart-project.eu

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1. Introduction: Description of the activity

The RESTART Toolbox test in Malta was held in collaboration with Prominent Fluid Controls Ltd. Prominent Fluid Controls is a German Manufacturing company with a production base in Malta. The operations of the company are therefore mainly geared towards the production, but include departments such as purchasing, human resources, IT, etc.

After a number of meetings and discussions with the top management team at Prominent, including the CEO of the company, it was agreed that two training sessions of 40 hours each would be employed. Training Session 1 (TS1) would be targeted towards technical level and middle management employees whereas Training Session 2 (TS2) would be targeted towards the Higher Management of the company. For TS1 a total of 16 participants registered, whereas 10 participants registered for TS2.

This information can be summarized by the results of the pre-training questionnaire (Questions 6 & 7) visualized in Figures 1, and 2 respectively.

6 - Which economic branch do your business or the business you work for belong to? (only for workers and entrepreneurs)

26 responses

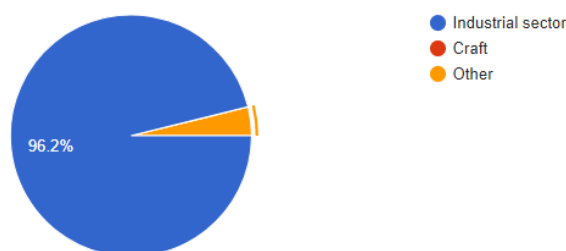


FIGURE 1 - RESPONSE QUESTION 6

7 - Which role do you play in the company organizational chart? (only for workers)

26 responses

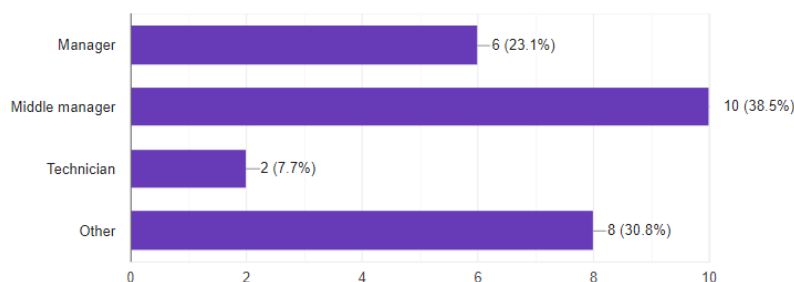


FIGURE 2 - RESPONSE QUESTION 7

8 - Which organizational business department do you belong to? (only for workers)

26 responses

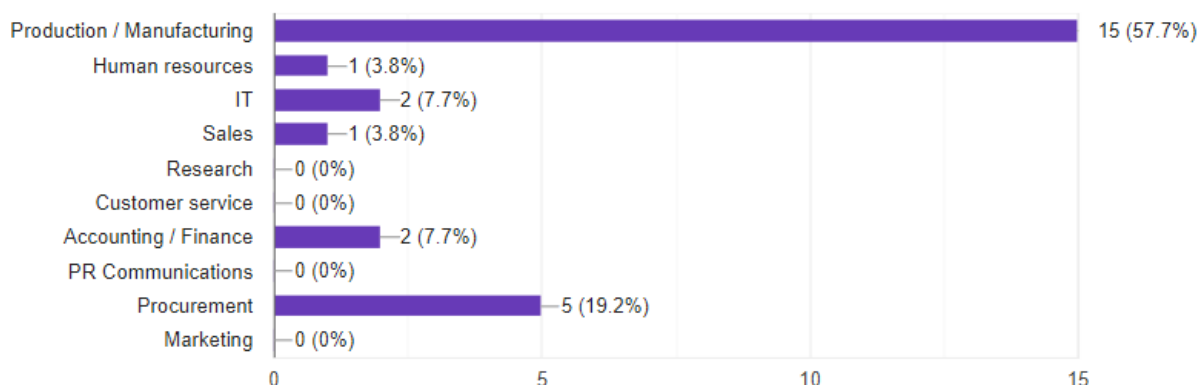


FIGURE 3 - RESPONSE QUESTION 8

9 - Have you attended already similar courses provided by other organizations?

26 responses

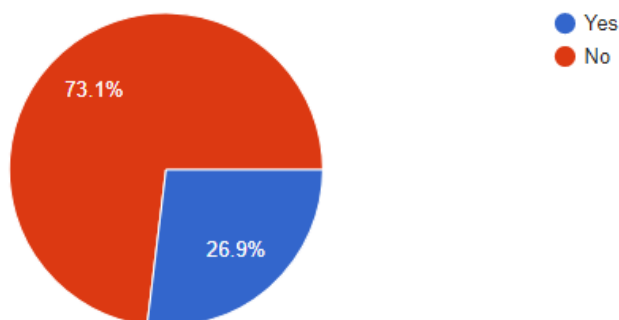


FIGURE 4 - RESPONSE QUESTION 9

By utilizing the RESTART Toolbox and Skills Profile the following Training Courses were developed:

	Training Session 1 (TS1)			Training Session 2 (TS2)		
	<i>Technical and Middle Management</i>			<i>Higher Management</i>		
	<i>Topic</i>	<i>Online</i>	<i>F2F</i>	<i>Topic</i>	<i>Online</i>	<i>F2F</i>
Session 1	Introduction to Industry 4.0	4	2	Introduction to Industry 4.0	4	2
Session 2	Industry 4.0 Technologies: Latest Updates in CAD, PLM and 3D Printing	4	4	Industry 4.0 Technologies: PLM & Cloud Based Services	4	2
Session 3	Industry 4.0 Technologies: Cloud Based Computing	4	3	Industry 4.0 Technologies: Digital Factory	4	3
Session 4	Industry 4.0 Technologies: Digital Factory	4	3	Industry 4.0 Technologies: AI & Big Data	4	3
Session 5	Industry 4.0 Technologies: Cyber Security	4	2	Industry 4.0 Technologies: Cyber Security	4	3
Session 6	Industry 4.0 Technologies: AI & Big Data	4	2	e-Leadership Skills	4	3
	Total:	24	16	Total:	24	16

Participants to training sessions 1 & 2 can be seen in Figures 5 & 6 respectively.



FIGURE 5 - SESSION 1 TECHNICAL AND MIDDLE MANAGEMENT



FIGURE 6 - SESSION 2 HIGHER MANAGEMENT

The below is a discussion of the results from the pre-training questionnaire:

As can be seen from Figure 7, most participants (70%) agree that the objectives of the training were clearly defined. This means that the communications and course structure which was done previously to the start of the course to the participants was clear and the participants knew what was the content of the course which would be delivered.

1 - The objectives of the training are clearly defined?

26 responses

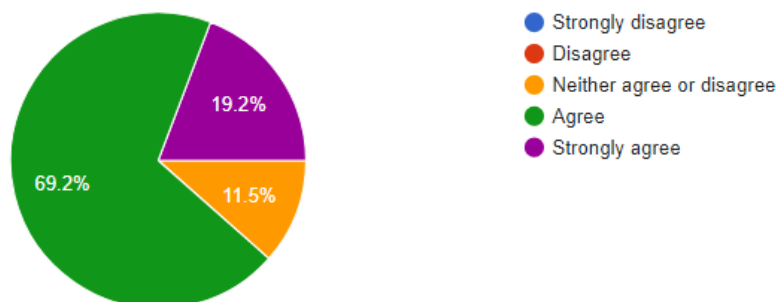


FIGURE 7 - RESPONSE QUESTION 1

It is interesting to note that as can be seen from Figure 8, it can also be noted that only 11% of the trainees would be encountering these topics for the first time rather the majority (70%) of the participants hoped to update their knowledge about the topics in the training, which means they already had a degree of familiarity with the subjects.

2 - What do you hope to gain by participating in the course?

26 responses

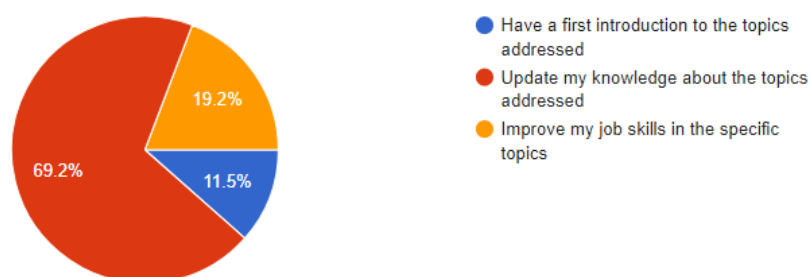


FIGURE 8 - RESPONSE QUESTION 2

Figure 9 describes the current understanding of the topics before the training. The majority (73%) had a fair to good understanding of the topics, whilst 27% only had a poor initial understanding.

3 - How would you rate your current understanding of the topics in this course?

26 responses

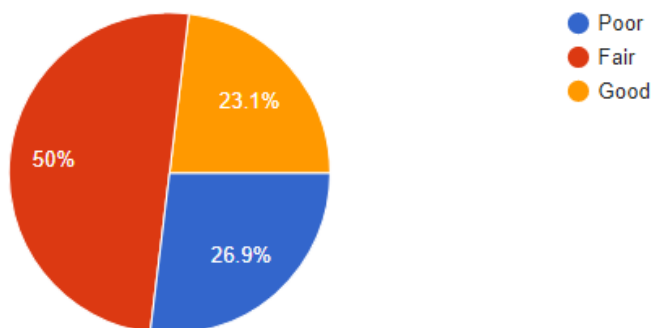


FIGURE 9 - RESPONSE QUESTION 3

It is very encouraging to note that as seen in Figure 10, 87.5% of the participants agree or strongly agree that the course will benefit their professional work, pointing out at the relevance of the RESTART training content towards supporting industrial training.

4 - I think this course can benefit my professional work

24 responses

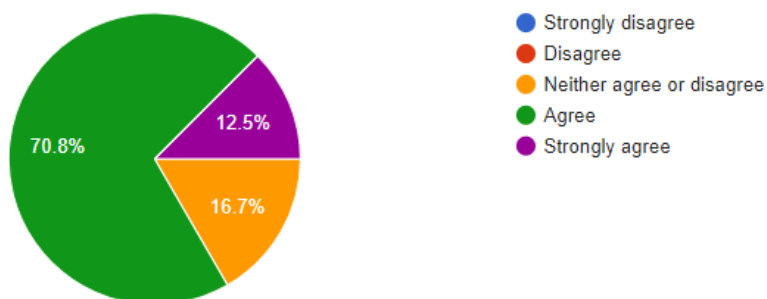


FIGURE 10 - RESPONSE QUESTION 4

2. Presentation of the views/opinions of all participants & stakeholders

Following the training a post questionnaire was carried out with the participants in order to assess their views about the topics and RESTART course.

It is very encouraging to note that as can be seen from Figure 11, 92% of the stakeholders agree or strongly agree that their expectations about the course have been met. Therefore, if this correlates to the results of Figure 8 and 10, where a large majority of the participants are of the opinion that the RESTART course will benefit their professional work, one can conclude that this experience has been beneficial for the participants in the long term.

1 - My expectations about the course have been met

26 responses

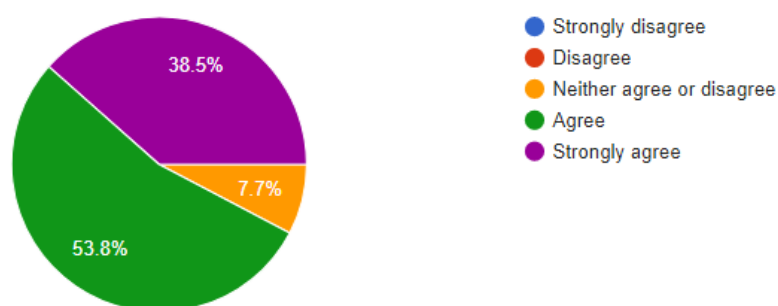


FIGURE 11 - RESPONSE QUESTION 1

Figure 12 shows how the vast majority of the participants (96%) believe that the course has increased their current understanding of the topics. This means that the RESTART course met the aim of transferring *new* knowledge to the participants engaged in the training courses.

2 - This course has increased my current understanding of the topics

25 responses

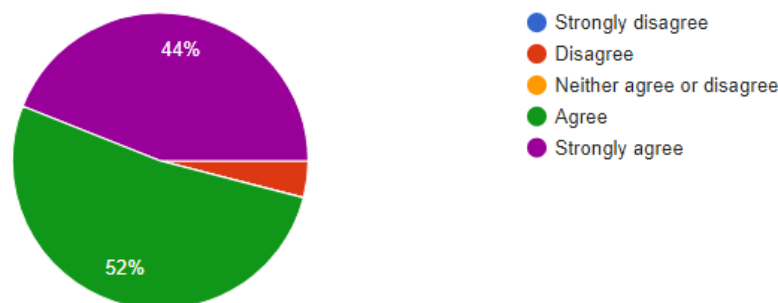


FIGURE 12 - RESPONSE QUESTION 2

As can be seen from the responses in Figure 13, following the training a vast majority (77%) still believe the course will be benefiting their professional work, even though there is a slight decline when compared to the pre-training questionnaire. This may indicate that as participants gain more knowledge about the topics, they are more capable of understanding the relevance to their work area.

3 - This course will benefit my professional work

26 responses

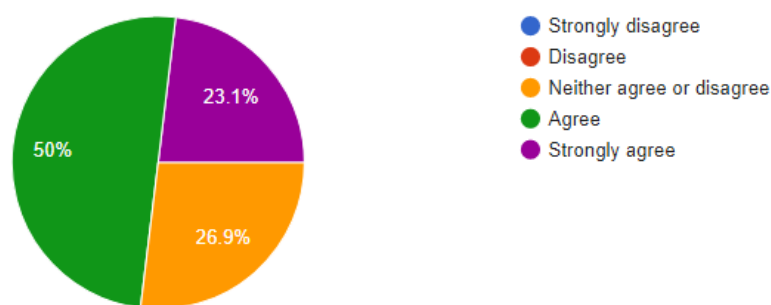


FIGURE 13 - RESPONSE QUESTION 3

Figure 14 shows how the vast majority of the participants (96%) believe that the course has increased their knowledge about the topics presented during the course. This means that the RESTART course met effectively increased the knowledge to the participants engaged in the training courses.

4 - This course has improved my knowledge about the topics presented

26 responses

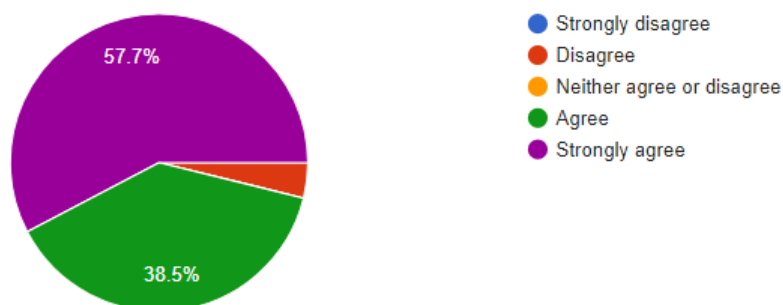


FIGURE 14 - RESPONSE QUESTION 4

When considering the mix of backgrounds and knowledge levels attending the training the results shown in Figure 15 and 16 whereby 85% and 92 % of the participants respectively feel that the course was designed just right for their experience level means that the RESTART toolbox, is very effective at developing the training material required to support industry in updating their knowledge on Industry 4.0, thus achieving the aim of the project.

5 - For my experience level, the course was

26 responses

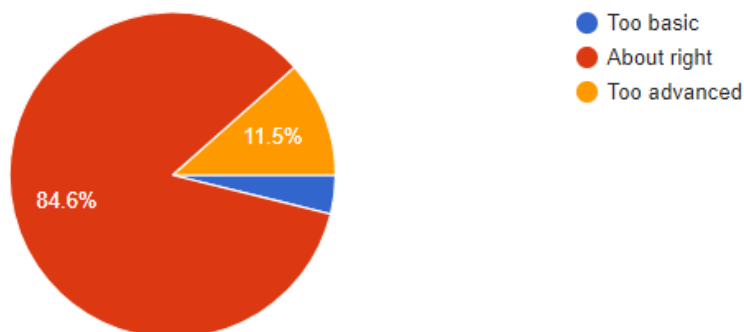


FIGURE 15 - RESPONSE QUESTION 5

6 - The training material provides was suitable for my level of experience

26 responses

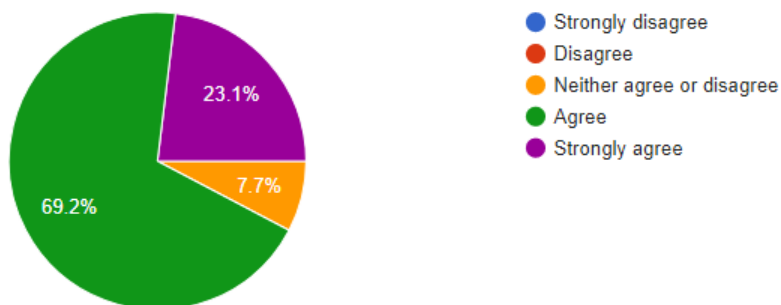


FIGURE 16 - RESPONSE QUESTION 6

As can be seen from the results shown in Figures 17, 18 & 19, all (100%) of the participants think that the training material was interesting, 92% think it was up to date and forward looking, and 88% think it was easy to understand. Furthermore, results shown in Figure 20 show that 92 % of the participants are of the opinion that the RESTART training material was organized and easy to follow. This means that the training quality of the RESTART material developed during this project was very high.

7 - The training material provided was interesting

26 responses

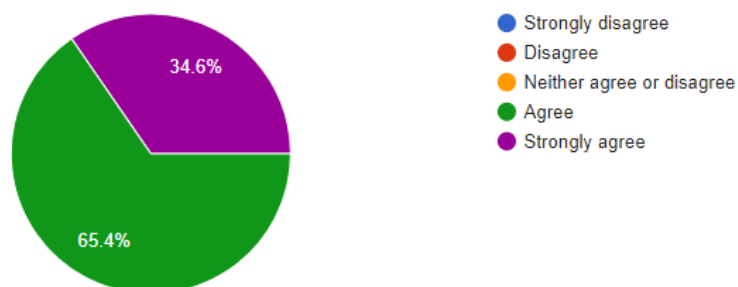


FIGURE 17 - RESPONSE QUESTION 7

8 - The training material provided was up-to-date and forward-looking

26 responses

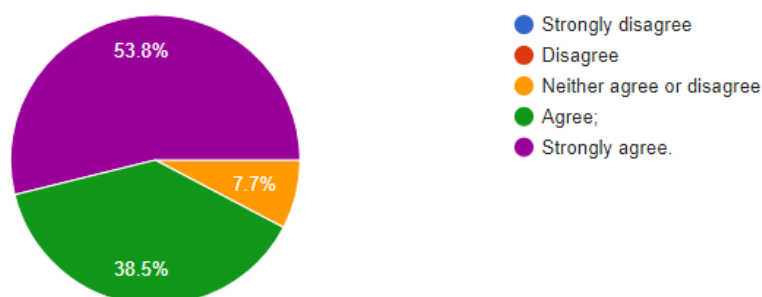


FIGURE 18 - RESPONSE QUESTION 8

9 - The training material provided was easy understandable

25 responses

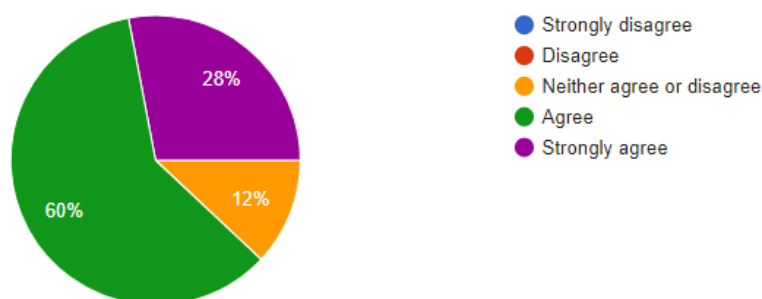


FIGURE 19 - RESPONSE QUESTION 9

12 - Overall the content was organized and easy to follow

26 responses

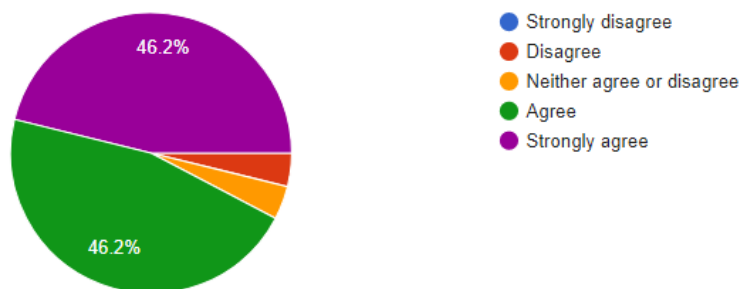


FIGURE 20 - RESPONSE QUESTION 12

The response to question 10, shown in Figure 21 shows that the vast majority (92%) of the participants believe that the RESTART training course helped them better understand the complex issues and problems related with the implementation of Industry 4.0 technologies in the workplace.

10 - The training material provided helped me better understand the issue

26 responses

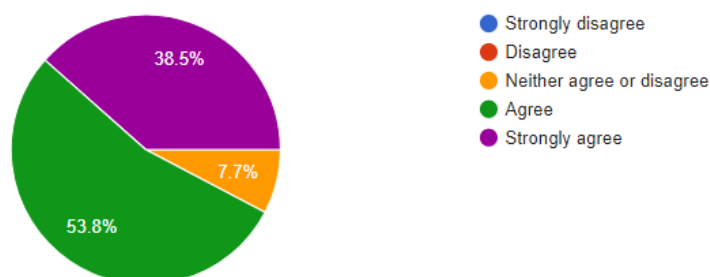


FIGURE 21 - RESPONSE QUESTION 10

Finally, after training 73% of the participants still believed that the training material provided was relevant to their work within the company. This is only slightly down (from 77% shown in Figure 13) from the pre-training questionnaire.

11 - The training material provided provide information relevant my work

26 responses

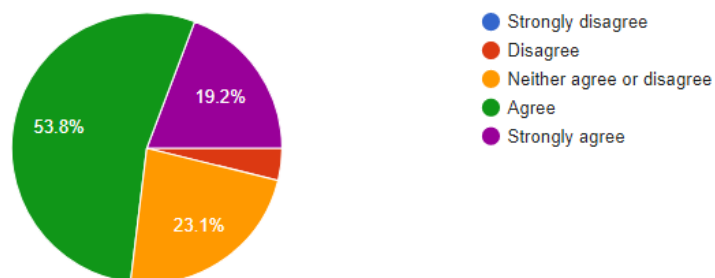


FIGURE 22 - RESPONSE QUESTION 11

3. Main findings from the focus group: participant's feedback

Following completion of the RESTART training course at Prominent, a focus group was held with the participants to TS2, i.e. the higher management group within the company. The reason this group was chosen for the focus group was that they had a better outlook with respect to the overall strategy and implementation of Industry 4.0, and their opinions on the RESTART training course would therefore be more relevant.



FIGURE 23 - FOCUS GROUP PARTICIPANTS

In general, the participants wanted to learn more about Industry 4.0, including the perils of implementing such technologies, as well as the implementation rate. They all agreed that there was a lot of hype surrounding the term, at the same time they were aware of some of the advantages which could be gained.

The higher management team expected therefore the RESTART training program to address some of these issues, by expanding further into topics which were of interest and yet they did not have the time normally to invest into training on such specific subject matters.

All the focus group member agreed that the objectives of the training were clearly defined. Being part of the higher management team means that they all had an idea about the impact of Industry 4.0 technologies in industry, therefore they knew what they expected to be trained upon when they were made aware of the topics available. Most of the topics covered were in fact relevant to their work, though there were some topics which elicited more scepticism than others. Specifically, for example the use of big data and big data analysis due to it's complexity and still early stages of development with respect to industrial use, still is difficult to apply within the context of most industrial work. That said it was still very important for management to know about the advantages that this could bring as well as the difficulties that may be faced during the various types of implementations of this technology.

All the focus group members agree that the content was well organized and laid out, which made it very easy for them to follow the different topics, as well as how these topics integrated well with respect to each other. This made them understand that Industry 4.0 is not about one topic, or technology, but

rather of how a number of technologies could be made to work together. The participants also noted that during the face to face sessions a number of very interesting discussions, and sometimes arguments, arose which encouraged the interaction both between trainees and also with the trainer. This training experience was therefore very useful for them as it helped them explore the boundaries of their knowledge, gain new knowledge, and understand how different solutions may be implemented.

The focus group members agreed that duration of the training sessions, both online and face to face, was very well structured. This gave them the possibility to understand certain basic concepts before the face to face content of the courses was provided which was more focused around discussion, and application of the technologies as well as trying to understand the limitations and possibilities of the technologies when applied together.

The part of the course that was found most forward looking and especially useful was the concept of eLeadership. The focus group participants realised that the current industrial scenario is going to be changing in the coming years, especially with the introduction of a new generation (Z) of stakeholders who are very alien to the current thoughts and methodologies which are currently common practice within the industry. Therefore, if companies are going to be forward looking and attractive towards new employment with the younger generation, they need to be capable of changing radically their style of leadership.

Since the focus group members were the managers of the participants who attended for Training Session 1, then they could also comment of the applicability of the training session on their employees. They all agreed that the time and resources invested in training their technical and middle management was very well worth as this would give them an easier opportunity to breach certain topics and visions with them in the future. Hence, they concluded that the training activities improved both the skills as well as the awareness of workers at different levels within the company as required with respect to the different elements of Industry 4.0 and how these could be brought together to develop innovative and effective solutions to their everyday problems.

4. Conclusions and recommendations for the final Toolbox

What did we learn from the tasting phase?

As can be seen from the results of the pre/post questionnaires as well as from the reactions gained via the focus group it can be concluded that the RESTART training test conducted by MECB in Malta was a great success. In summary:

- The aims of the training course were well communicated and understood by the participants;
- The participants think that the training will improve their professional work;
- The participants agree that the training course was well structured and easy to follow;
- The knowledge of the participants with respect to Industry 4.0 skills and technologies was increased.

With respect to the training conducted, the participants all commented very positively about the online eLearning course, as it gave them a very good background to the topics and allowed them to prepare themselves properly for the face to face sessions. A slight improvement would be to include specific discussion points during the face to face presentations which would present some controversial aspect to the topic and would give the opportunity to the participants to voice their opinions.

The training course could also be improved by giving greater focus on the possible ways of how specific technologies could be applied within industrial scenarios. This could be done by providing information of specific case studies where the technologies have been implemented successfully and with specific gains within industry. This would help support the trainer in explaining the benefits of the technologies even to those participants who are mostly sceptical to the use of certain technologies, or who are most resistive to change of long established work practices, which ultimately is the aim of Industry 4.0 This aspect is also visible to the replies to Question 11 (Figure 22) and Question 3 (Figure 13). It is believed by the trainer that if this aspect of the training were redesigned or improved, then it would give a greater impact with the trainees. This could also be done in conjunction with a “hands-on” or practice oriented session during the face to face sessions, whereby the participants are provided with an actual industrial problem, and then asked what technologies would be utilized, and how these would be implemented to tackle this specific challenge.

In general the RESTART training test was an all around success both from the trainees and the trainers who had a very positive learning and personal experience throughout the course, especially when seeing that the participants were all engaged and receptive of the knowledge being transferred.

RESTART 4.0

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