WP 5 - Dissemination and Exploitation of Project Results

Outcome 5.3 - Production and dissemination of project materials

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1.Executive Summary

Task 5.3 in the MSIE4.0 project is about production and dissemination of project materials. In this project, project webpage, newsletters, materials for flyers, brochures, and presentation on events are developed and distributed to related stakeholders regularly. All partners have participated in production and dissemination of project results such as organizing the dissemination events, workshops, and seminars.

In this MSIE4.0 project, two kinds of brochures were developed as one of the dissemination materials. The first brochure was developed for introducing of the MSIE Project by all partners. It was attached at each university's partner and it was also distributed to other universities, government and private sectors in order to increase visibility to other faculty members, students, technical staff, and other individuals. While the second one was a flashback of the first half of our MSIE 4.0 project for reporting the progress of the project. It was distributed as the same channels mentioned earlier. At the end of the project, the brochures to promote the international conference on engineering education (PAEE/ALE2020) are created and distributed to our target groups via various distribution channels such as posting in the project website and facebook, emails, LINE, and WhatsApp. Additionally, a presentation Board to promote the MSIE4.0 project outcome was prepared for the exhibition of Science and Modern Technology to celebrate the 60th year of KMUTNB at which Her Royal Highness Princess Maha Chakri Sirindhorn presided over the opening ceremony. This event can increase project visibility effectively since it was the news in the national level.

Most importantly, we also promote of the project in the Council of University Presidents of Thailand On Nov 27,2018 which was the promotion of the project in the national education level. The Acting Secretariat of the Council of University Presidents of Thailand sent our brochure and shared the info of the project to all Thai university Presidents. Another dissemination material is VDO clips. They were also created on demonstrating pilot tests in some courses including short course training, and sharing activities of the project. These VDOs were put on the website and Facebook to make the website and Facebook themselves continuously active resulting in increasing numbers of visitors and views.

For dissemination channels, the project website and facebook that are suitable for dissemination the project information, activities, and project results were developed. They were created in order to share the project's information to the target groups and individuals with faster and clearer communication. Moreover, the MSIE4.0 project website is also hosted to the partners' website in order to make the target groups and individuals reach the project info in various dimensions more convenient. Moreover, other dissemination materials were distributed through other channels such as newspaper, conferences, meetings, seminars, workshop, and other electronic messages (email) or online communication app (LINE, and WhatsApp).

2. Introduction

In this project, dissemination materials are made in order to promote the information about the project objectives, modern concepts in Industrial Engineering (Industry 4.0) together with proper introduction of Industrial Engineering master program curriculum and results of MSIE04 project. The project webpage of the MSIE4.0 is utilized and materials for flyers, brochures, presentation on events, etc. are prepared. Newsletters are created and delivered to target groups twice a year. The letters will be in an easy-to-read format, with key project results, information regarding the project process and the training sessions as main messages. The WP5 leader is responsible for creating the newsletter layout. Local site managers are responsible for providing information about training sessions and demonstration projects, and also responsible for providing different stakeholders with the newsletter. The promotion in social media focuses on advertising of the project major events, like Workshops, Seminar and Final Conference, as well as publishing information on the project results. Details of dissemination materials are shown in the following sections.

3. Dissemination materials

In this project, various dissemination materials were created in order to promote 1) the objectives, activities and results; 2) the concepts of the new study program; and 3) the final dissemination-sustainability conference (PAEE/ALE 2020). Each kind of dissemination material made in this project is detailed in the following:

3.1 Brochures and Flyers

In this MSIE4.0 project, two kinds of brochures were developed as one of dissemination materials. The first brochure was developed for introducing of the MSIE Project by all partners. It was attached at each university's partner and it was also distributed to other universities, government and private sectors in order to increase visibility to other faculty members, students, technical staff, and other individuals. While the second one was a flashback of the first half of our MSIE 4.0 project for reporting the progress of the project. Details of each brochure is presented as follows:

3.1.1 The first brochure

It was created to introduce the MSIE4.0project. Its contents are about the project's background, key outputs, project outcomes, curriculum focus, partners, associated partners, and how to reach the project's information (see Fig.1). This brochure was distributed to the target groups via various distribution channels such as in-person, Application Line, email, MSIE 4.0 facebook and website, partners' institution, and international conferences. The impact of this brochure can increase the project visibility in terms of the number of visitors of the website and the number of the FB page Like.

3.1.2 The second brochure

It was made in order to promote the project outcome from WP1. The contents of this brochure include (1) the data collection from industrial survey, review on current competitive factors, and student survey, (2) findings, (3) gap analysis, (4) competitive factor identification, (5) direction of MSIE4.0 curriculum, (6) learning experience-focused course design and development, (7) courses for MSIE4.0 curriculum, (8) development of laboratory with online remote access, and (9) organizing international conference on engineering education (see Fig. 2). This brochure was distributed to the target groups via the same distribution channels as the first brochure. That means it was distributed by giving in-person, by Application Line, email, MSIE 4.0 facebook and website, partners' institutions (see Fig. 3), and international conferences (see Fig. 4). The impact of this brochure can increase the project visibility in terms of the number of visitors of the website and the number of the FB page Like.

Figure 1. First Brochure/Flyer for introducing the MSIE4.0 project

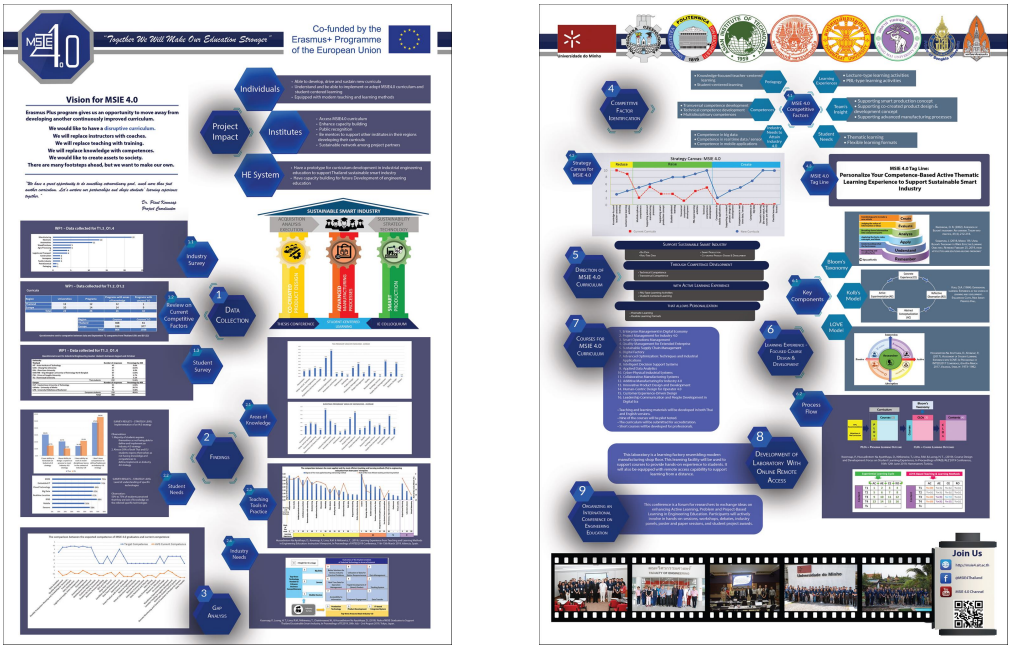

Figure 2. Second Brochure/Flyer to promote the Project outcome from WP1

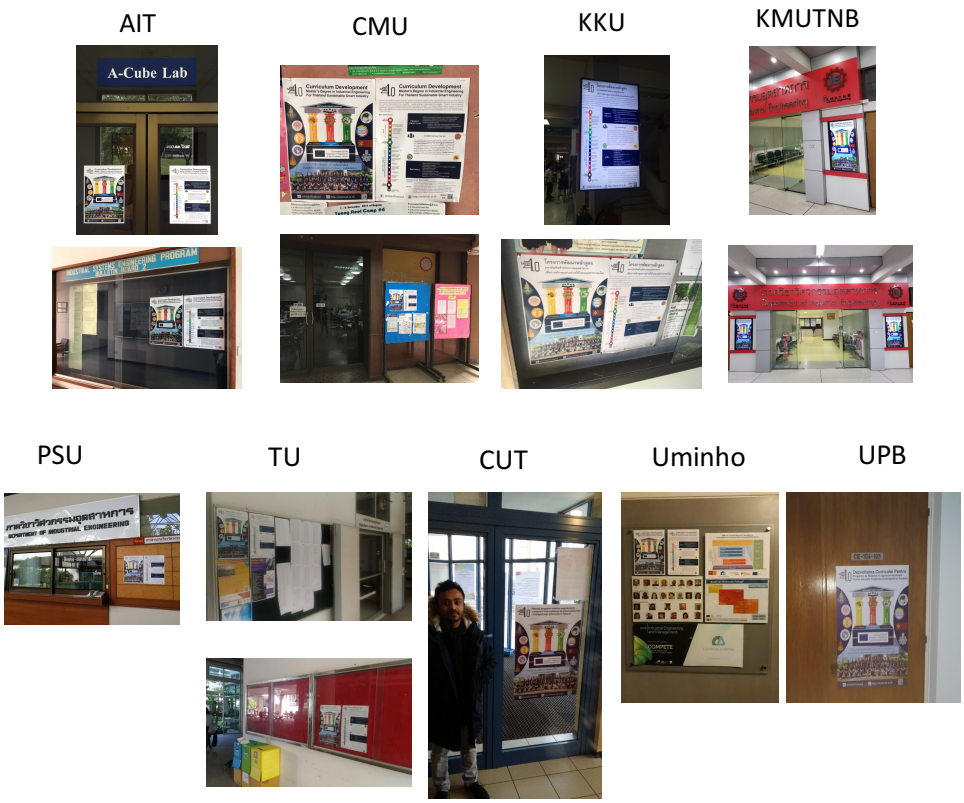

Figure 3. Brochures were posted at each partners' institutions

Figure 4. Examples of brochures introduced in the international conferences

3.1.3 Brochures to promote the international conference on engineering education

On August 26-28, 2020 PAEE/ALE' 2020 was organized at the AIT Conference Center, Thailand. Brochures were made to promote of the conference with all information such as a hybrid format of the conference, venue **(http://msie4conference.ait.ac.th/?page_id=3003)**, sessions, topics of interest, keynote presentations, oral presentation sessions, local workshop, and three hybrid workshops (see Fig. 5-Fig. 7). These brochures were distributed to the target groups such as professors, academic staff, students, and industry representatives via potential channels such as giving in-person, by Application Line, email, MSIE 4.0 facebook and website, partners' institution.

Figure 5. A Brochure to promote the international conference

CALL FOR PAPERS & WORKSHOP SESSIONS

You are cordially invited to submit a paper and participate in the International Conference on Active Learning in Engineering Education (PAEE/ALE' 2020) in Pattaya, Thailand, during August 26 -28, 2020.

PAEE/ALE' 2020 will bring together academic people and interested industry professionals around the world to exchange their knowledge and ideas on Engineering Education related to the conference theme "Striving Engineering Education Towards Student Competence Development". We are looking for your submission to share an important role of active learning in preparing more creative and innovative professionals.

Similar to previous PAEE/ALE conferences, the participants will be in contact with current research on active learning in Engineering Education. They will also experience active involvement in hands-on sessions, workshops, debates, a round table, poster sessions, and student project sessions. Furthermore, we are enthusiastic about having prominent keynote speakers to share their visions on Engineering Education to inspire our academic people. Our keynote speakers will offer different perspectives to expand the horizon of our participants.

Your participation will strengthen our Engineering Education community and make our education stronger.

Venue

PAEE/ALE' 2020 will be in Pattaya, Thailand's resort city on the east coast of the Gulf of Thailand. Pattaya is about 118 kilometers (73 miles) from Suwannabhumi International Airport. Traveling to Pattaya is easy and convenient as there are plenty of caps, vans, and buses from the airport as well as Bangkok. Within two hours, you will arrive at a beautiful beach in Pattaya, a host to a beguiling range of attractions from ancient Thai traditions to modern adventures.

Topics of Interest

- Active Learning and ICT support
- Attracting young people to Engineering
- Basic sciences in engineering education
- Curriculum design
- Development and assessment of competences
- Diversity in Engineering students
- Education for sustainability
- Evaluating PBL and Active Learning
- Implementation of pedagogic changes
- Innovative experiences in engineering education
- Interdisciplinarity
- Project management in engineering education
- Research on PBL and Active Learning
- Serious games
- Student assessment in PBL and Active Learning
- Student engagement in learning
- Teacher and tutor roles in PBL and Active Learning
- Teamwork
- University-Business Cooperation
- Workspaces for Active Learning

Types of Contributions

Papers

We welcome both full papers and abstracts only. The accepted submissions will appear in a conference booklet, and the authors will be invited for oral presentations. However, only the accepted full papers will be included in conference proceedings that will appear in the SCOPUS database.

Interested authors are invited to submit 300-word abstracts before the deadlines by using the web submission platform: https://easychair.org/conferences/?conf=paeeale2020.

Workshop and Hand-On Sessions

Potential contributors are invited to submit a proposal for either a workshop or a hands-on session. Please visit the conference website for more information.

Opportunity for Students

Students who develop project work in their study are invited to submit papers on their learning experiences in project work. Student papers will be candidates for the best Student Paper Award.

Important Dates

March 1, 2020	Abstract submission for full papers
March 21, 2020	Notification of abstract acceptance
April 15, 2020	Full paper submission
April 30, 2020	Abstract only submission
May 21, 2020	Notification of acceptance
June 5, 2020	Camera-ready submission for full papers
June 21, 2020	Early registration
August 26, 2020	Conference opening

Conference Chairs

Honorary Chairs:
Eden Y. Woon ,
Asian Institute of Technology, Thailand
Erik de Graaff,
Aalborg University, Denmark

Conference Chair:
Pisut Koomsap,
Asian Institute of Technology, Thailand

Program Chairs:
Kanchana Sethanan,
Khon Kaen University, Thailand
Valquíria Villas-Boas,
Universidade de Caxias do Sul, Brazil

Scientific Committee Chairs:
Rui M. Lima,
University of Minho, Portugal
Huynh T. Luong,
Asian Institute of Technology, Thailand

Student Session Chairs:
Diana Mesquita,
University of Minho, Portugal
Jens Myrup Pedersen,
Aalborg University, Denmark

PAEE/ALE' 2020 Pattaya, Thailand

Figure 6. A Call for paper brochure to promote the international conference

Figure 7. A Brochure to promote the international conference

3.2 A Presentation Board to promote the MSIE4.0 project outcome

On March 22, 2019, the presentation board was prepared for the exhibition of Science and Modern Technology to celebrate the 60th year of KMUTNB at which Her Royal Highness Princess Maha Chakri Sirindhorn presided over the opening ceremony (see Fig. 8). For this occasion, our project team had the honor to present to Her Royal Highness our MSIE 4.0 project on behalf of our community.

Figure 8. Presentation Board to promote the MSIE4.0 project outcome of WP1

3.3 VDO Clips

In this project, 51 clip VDOs were made. They are about the VDOs of the 4 Keynote speakers of the PAEE/ALE 2020 conference, 5 MSIE4.0 Short courses, welcome to MSIE4.0 projects, public seminars, regular MSIE4.0 meetings, activities of the project partners, and the progress of work packages 1 and 2 (see Fig. 9 and Fig. 10). The clip VDOs are made in the project since they are an excellent format for informing and educating, convey huge amounts of information in a short time, easier to understand, engage and immerse learners, and create an experience for the audiences. For the distribution channel, Clip VDOs were put on the project website and facebook to make both of the website and facebook continuously active resulting the increase number of visitors and views.

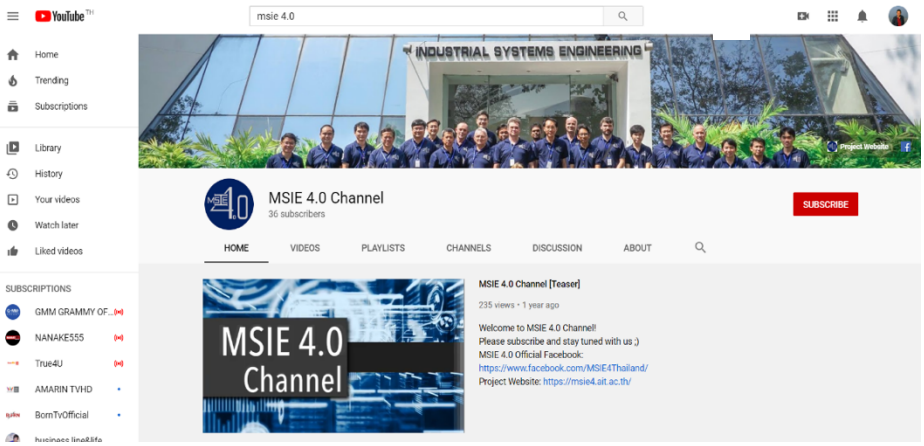

Figure 9. MSIE4.0 Channel

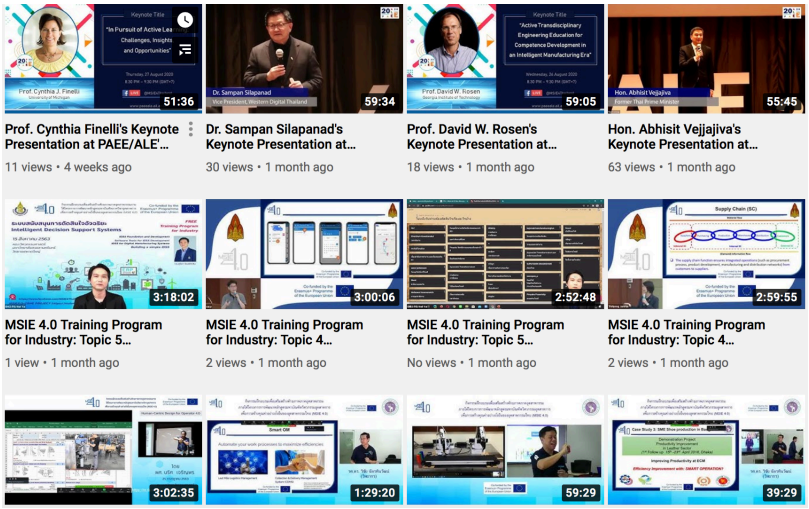

Figure 10. Examples of the VDOs made in the project

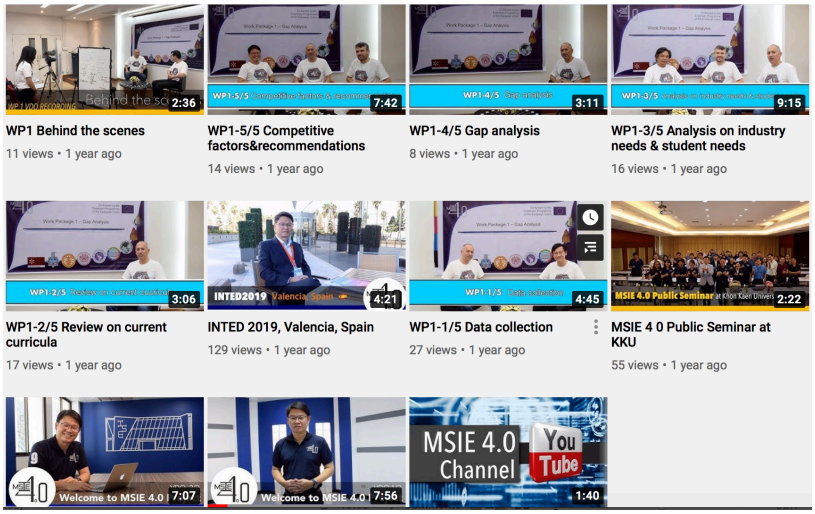

Figure 10. Examples of the VDOs made in the project (cont'd)

3.4 Formal letter to promote the project to the Higher Education Commission (OHEC)

In order to promote the MSIE4.0 project widely, the government sector is one of our target groups. On Nov 27,2018, we promoted the project in the Council of University Presidents of Thailand by sending the formal letter including brochures and related materials to introduce the project. The Acting Secretariat of the Council of University Presidents of Thailand sent our brochures and materials, and shared them to all Thai university Presidents (see Fig. 11).

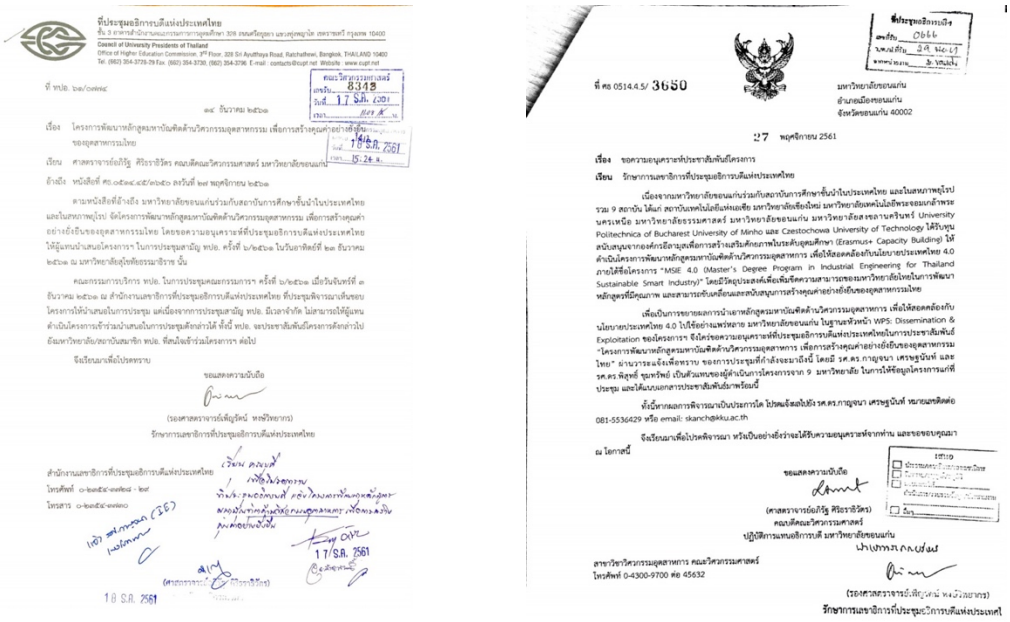

Figure 11. Promotion of the project in the Council of University Presidents of Thailand

In conclusion, in this project, the numbers of dissemination materials produced in this project classified by types and years are summarized in Table 1. From this table, we found that many kinds of dissemination materials were produced during the project continuously in order to increase project visibility.

Table 1. Number of kinds of dissemination materials produced in each year

Summary (2018-2020)	Amount of kinds of dissemination materials
January 2018 – December 2018	2
January 2019 – December 2019	2
January 2020 – October 2020	3
Total	**6**

4. Major Dissemination channels

The project materials created in Section 3 were distributed to increase the project visibility in all dimensions through various channels. The dissemination channels used in this project are created from the concept of easy to access by the target groups and efficiency of dissemination. The main effective channels of the project are such as the project website and facebook. Additionally, other channels are email, application LINE, WhatsApp, partners' and associated partners' websites and facebooks, seminars, workshops, partners' and associated partners' institutes, conferences, and in-person. Details of the dissemination channels are as follows:

4.1 Project website

Another dissemination channel which is suitable for dissemination the project information, activities, and project results is the project website. Its address is **https://msie4.ait.ac.th/** (see Fig. 12). It was created in order to share the project's information to the target groups and individuals with faster and clear communication. Moreover, the MSIE4.0 project website is also hosted to both of the partners' and associated partners' websites in order to make the target groups and individuals reach the project info in various dimensions more convenient (see Fig. 13). The target groups to reach the project's website are academic staff, researchers, potential students, and industry representatives.

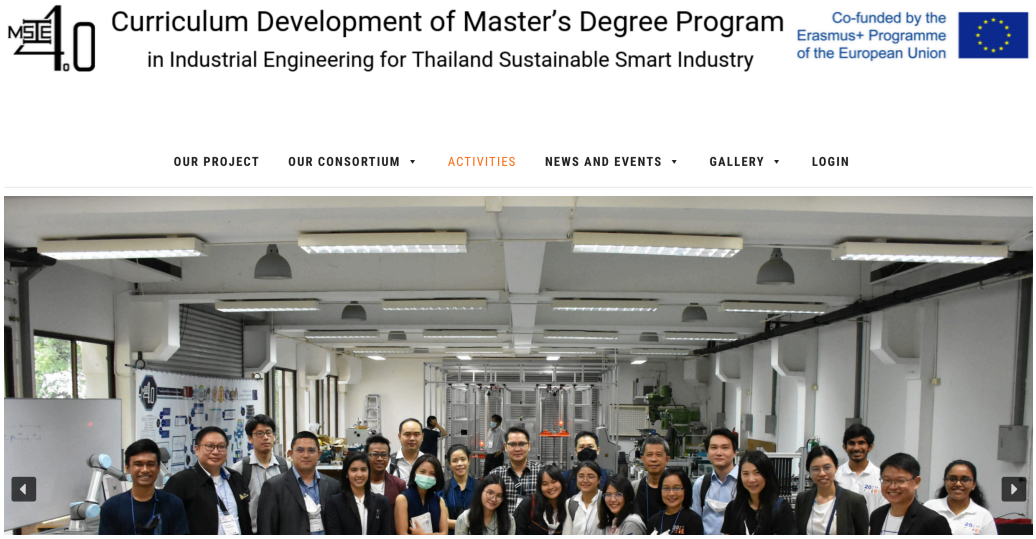

Figure 12. MSIE4.0 website (https://msie4.ait.ac.th/)

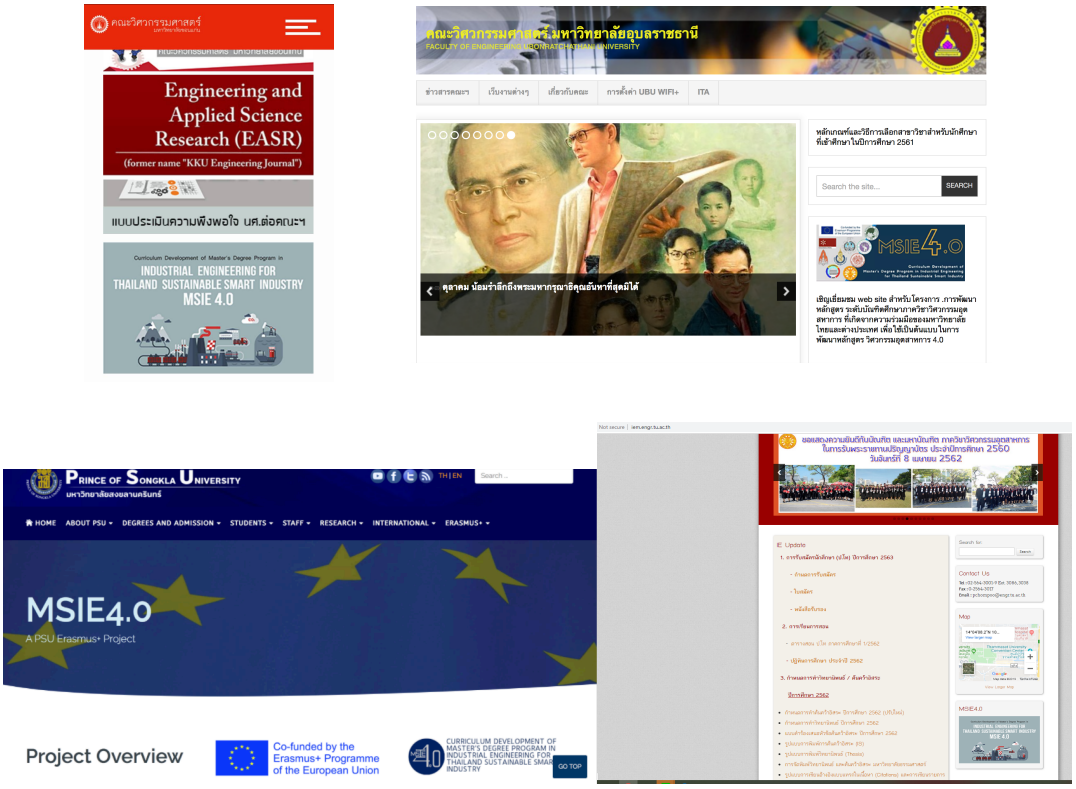

Figure 13. Examples of the MSIE4.0 project website hosted to the partners' and associated partners' websites

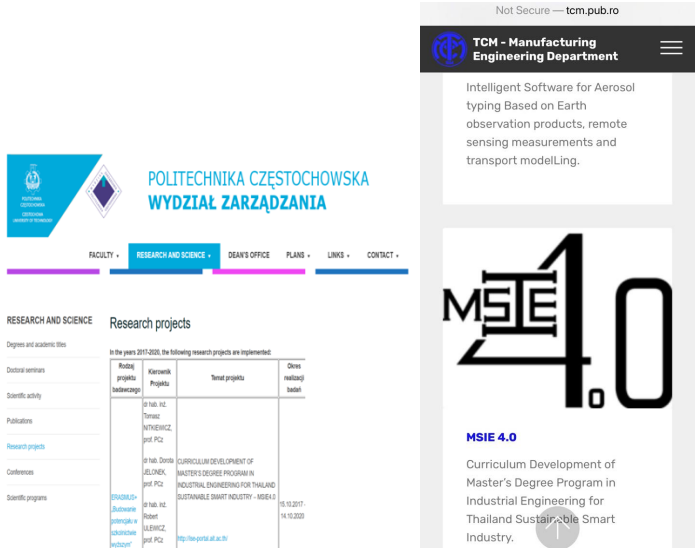

Figure 13. Examples of the MSIE4.0 project website hosted to the partners' and associated partners' websites (Cont.)

4.2 Project facebook

In this project, the project's Facebook was developed as a social networking site that makes it easy for the project to connect and share all information with the target groups online. The address is **https://www.facebook.com/MSIE4Thailand/** (see Fig. 14). The project's facebook has been updated the project's information regularly. The crucial information is such as activities, workshops, seminars, clip VDOs, and brochures.

Figure 14. Project Facebook (https://www.facebook.com/MSIE4Thailand/)

4. 3 Newspaper/magazine

On June 17, 2019, the MSIE4.0 project was introduced in Bangkok post website with the VDO clip under the title of "Preparing for the future". It announced that Thai universities joined hands in offering industrial engineering courses to prepare the country for the so-called Industry 4.0 (see Fig. 15). In the same year, introduction of the project was published in Politechnika Częstochowska Magazine on July 2019 by CUT members. Its title was "Spotkanie w ramach projektu MSIE 4.0 programu CBHE-KA2 Erasmus+".

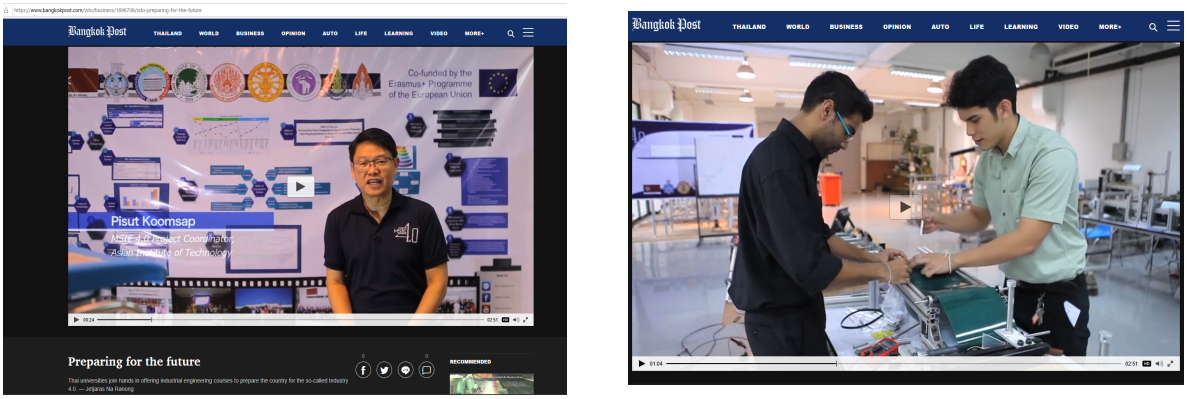

Figure 15. Clip VDO of the MSIE4.0 project introduced in Bangkok post under the title of "Preparing for the future"

4.4 Conferences

An academic conference is a gathering of academicians, where research findings are presented or a workshop is conducted. Various conferences are conducted in each year for both national and international ones. Therefore, the members of all partners usually take this opportunity to promote the project while he/she has to present the research paper. Promotion of the project can be done by distributing the brochures to the participants, presenting the papers related to the project, or introducing the project during the presenting the paper (see Fig. 16). In this project, there are numerous presentations in the conferences. Details are presented in the WP5.4 final report.

Figure 16. Examples of introducing the MSIE4.0 project by the project's partners in the conferences

4.5 Meeting/Seminar/Workshop

Promoting the project through meeting/seminar/workshop is one of the efficient approaches. We usually use these methods for disseminating the project when we require times to communicate with the audiences. Meeting is usually conducted for introducing the project, while seminar and workshop are required for disseminating the outputs of the project. These approaches can impact on the project very well since they has made the audiences get the information effectively. Examples of some meetings, seminars, and workshops conducted in the project are presented in Fig. 17.

Figure 17. Examples of some meetings, seminars, and workshops conducted in the project

4. 6 Email, LINE, and WhatsApp

These approaches are usually used to distribute the dissemination materials of the project to our colleagues and target groups. The materials can be sent any time with simple and easy to use, free to send, and usually received fairly quickly.

5. Analysis of the impact of the dissemination material to the project

Since different perceptions and material accessibility of stakeholders were considered, to disseminate the project efficiently, mixed strategies of dissemination materials are distributed using various channels to increase project visibility as shown in Table 2. Also, the impacts of the project dissemination in terms of pros and cons are summarized in Table 3.

Table 2. Distribution channels for each material made in the project

Material/activity	Distribution channel
Brochures	Website/FB/Email/Line/WhatsApp/Conference/Partners' websites and institutions /Associated partners' websites and institutions
Clip videos	Website/FB/Newspaper website
Posters	Website/FB/Conference/ Meeting/Seminar/Workshop
Paper	Website/FB/Conference/Journal
Workshop/seminar	Website/FB
Introduction of the project	Website/FB/Email/Line/WhatsApp/Conference

Table 3. Analysis results of the impact of the materials to the dissemination of the project

Material/channels	Pros	Cons	Key Success Factors (KSF)
Flyers, brochures, and Newsletters	Present on events	- People may not read the information contained in the flyers - Easily Dismissed by readers	Format, content, design
Website	- Information and details of the project can be accessed by anyone - Reaching a wider audience - The main interface of the online infrastructure of the project - Keep it up-to-date to be relevant to the project and encourage more visitors to visit	- Must be active - Increase expensive	- Format, content, design - Frequency for updating info
Facebook	- Share with others - Real-time	- Must be active - Increase expensive	- Format, content, design - Frequency for updating info
Workshops, Seminar	- Attendees will perceive a trustworthy info	well-planned	Impressive material

Material/channels	Pros	Cons	Key Success Factors (KSF)
	- A great way to network with other professionals		
Meeting	Real-time two-way communication	Arrangement	Content, communication approach, key person
Conferences	Networking, efficient Info-sharing	Registration process, high cost	Content, communication approach, Impressive material
Email	Can be sent any time, Simple and easy to use, Free to send, usually received fairly quickly	Email address must be available, Spam is a big problem, Email cannot be sent since its address may be changed	Content, Impressive material
LINE, and WhatsApp	Simple and easy to use, Audio messages included, Free to send	Files have to be download in specified periods, No status of "Online" or "Offline"	Content, Impressive material, informal communication
Final Conference of the MSIE4.0 project	Networking, efficient Info-sharing	High cost, well-planned	Well planning, promotion format

6. Conclusion

In this project, various dissemination materials were created in order to promote 1) the objectives, activities and results; 2) the concepts of the new study program; and 3) the final dissemination-sustainability conference (PAEE/ALE 2020). The dissemination materials created were such as brochures and flyers, a presentation board to promote the MSIE4.0 project outcome, clip VDOs, and formal letter to promote the project to the Higher Education Commission (OHEC). In order to increase the project visibility efficiently, the dissemination channels used were designed with the concept of easy to access by the target groups and dissemination efficiency. Therefore, the main effective channels of the project were the project website and facebook, electronic messages (email), online communication applications (LINE and WhatsApp), partners' and associated partners' website and facebook, seminars, workshops, meetings, partners' and associated partners' institutes, and conferences. Analysis of the impact of the dissemination material to the project was also summarized.