NEPTUN

NEW APPROACH TO INNOVATIVE TECHNOLOGIES IN MANUFACTURING

Deliverable 5.6

Setting up Advisory Board for Manufacturers

Work package No. 5 – Visibility & Social Media

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Lead participant: Gdańsk tech

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Revision History

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1. Introduction

NEPTUN Cluster of Excellence for Manufacturers is one of the key products of NEPTUN project. It falls within Objective 5 – Introducing the principles of Industry 4.0 into the manufacturing processes of SME's. Once established, NEPTUN's Cluster of Excellence will raise the research and innovation capabilities, triggering structural changes and building stronger links between industry, local and regional authorities and academia. Through the Cluster, these actors will be involved in the research, development and innovation activities to a greater extent. Companies engaged in the cluster will be able to compete more successfully on the market, transforming at the same time their enterprises to become green, smart, efficient and innovative. They will have easier access to scientific expertise offered by GDANSK TECH and its partners. In turn, GDANSK TECH will benefit from the closer cooperation with the industry by creating curricula which are better adjusted to the needs of industry and by being able to apply theory in practice and shape the research path to reflect the needs of industry. NEPTUN Cluster of Excellence for Manufacturers will also facilitate joint application for EU-funded grants and project.

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2. NEPTUN Cluster of Excellence for Manufacturers

2.1 Initial meeting

Although the idea of the cluster was present since the very beginning of NEPTUN project, the official initiation of the NEPTUN Cluster of Excellence for Manufacturers took place on 26 June 2023, during the Meeting of the FMEST Entrepreneurs Council. During the meeting, Marek Chodnicki, PhD, delivered the presentation about the cluster – its assumptions, goals, benefits and role it is to play in the introduction of Industry 4.0 and beyond. The presentation included a brief information about the idea of Industry 4.0, however its core consisted in presenting the structure of the cluster, its general strategy, financing and plan of action for the nearest future.

Since NEPTUN Cluster of Excellence for Manufacturers is to be deeply rooted in local and regional industry, it is natural that entrepreneurs participate in its creation. This is why the attendees of the meeting were given a survey which will be used by the NEPTUN Project team to define the needs and expectations of industrialists and to involve them into the cluster-related activities from the very beginning. The survey consisted in a number of questions. First the respondents were asked to provide basic information on their company, including the activity profile, legal form of the enterprise, ownership model, number of employees. In the next part of the survey, the questions were more closely related to the cluster and Industry 4.0. The respondents were asked whether they would like to join the cluster, there were also questions designed to gauge their knowledge of Industry 4.0 and its principles. The last group of questions was designed to help the project team define the expectations of the entrepreneurs, and their main areas of interest. The options included: access and exchange of information, exchange of good practices, participation in fairs, seminars and conferences, participation in cooperation networks, access to the university resources (laboratories, research infrastructure), cooperation within scientific-research projects,

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cooperation within commissioned research/study, cooperation within application/business oriented projects, didactics (development and creation of various forms of education such as engineering courses, post-graduate courses, involvement in the didactic process through conducting classes, ordering ME, MSc, PhD theses and realization of apprenticeship), internationalization of the company's activity through the cooperation within Cluster structures.

Among the respondents (23 companies and institutions) there were: Neptun Studio, PRS SA, Gitary Mayones s.c., Damen Engineering Gdansk, Listemann Polska Sp. z o.o., ROTOR-VENT Sp. z o.o., Baltictowers, NNT, INNTEC PL, KBR, Lotos Petrobaltic, Mechanika Radmor, Baltic Sea and Space Cluster, Pomeranian Voivodship Marshall Office.

Figure 1. Marek Chodnicki presents the assumptions of NEPTUN Cluster of Excellence for Manufacturers

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Figure. 2 Participants of the meeting

2.1.1 Results of the survey

Majority of the companies (over 70%) are commercial/production companies, 60% of them are privately owned. As far as the number of employees is concerned, 29% of the companies employ more than 500 workers, 25% employ from 10 to 49 and from 50 to 249 employers. Of 28 respondents, 16 (57%) would like to participate in the cluster, and 43% responded that they cannot decide at the moment, however, 96% of the companies want to be informed about the proceedings of the cluster. Majority of the respondents (over 60%) expects the exchange and access to information, exchange of good practices, participation in fairs, seminars and conferences, participation in cooperation networks, cooperation in application/business-oriented projects. For over 50% of the respondents, it is important to have access to the research infrastructure of the university and to cooperate in joint scientific and research projects and to internationalize their activities. In turn, over 40% of the respondents are interested in getting involved in the didactic processes in various forms. Over 80% of the companies would like to participate in meetings organized in the real world, but nearly 70% would also be satisfied if the meetings take place online. Over 60% would be interested in participating in a venue allowing the exchange of views and information.

2.1.2 Analysis of the survey results

On the basis of the survey results it can be stated that there is a sufficient level of interest in the cluster. While over 55% declared that they would like to join the cluster, the rest of the respondents see such a possibility depending on the Cluster's offer. This is very encouraging. As far as the companies expectations are concerned, they are in line with the assumptions of the project team – companies want to be involved in activities that can give them specific benefits, but they also want to influence the academic community and tighten the cooperation between industry and scientific community. Generally speaking, it is clear that there is a need for NEPTUN Cluster of Excellence for Manufacturers among local entrepreneurs, ranging from

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SME's to larger companies with established position on the market (e.g. Lotos Petrobaltic), who can benefit from the participation in this initiative. The results also indicate that the project team's idea to establish the cluster is a good one and must be materialized.

2.2 Current progress

2.2.1 Advisory board

After the meeting and careful analysis of the survey results, representatives of various institutions (SME, large companies, local authorities, etc.) were invited to join the cluster advisory board. At this point the board operates in an informal capacity, that is no formal document has been signed. This is due to the fact that the cluster has not yet been established, it does not have legal entity. However, certain steps were made in order to mitigate this situation. A lawyer specializing in cluster was contracted, legal form of the cluster and its associated bodies was selected. The by-law is being worked on.

The advisory board in conjunction with the representatives of GDANSK TECH created a set of basic assumptions and planned stages of the cluster development. They are described in detail in the sections below.

2.2.2 Basic assumptions for the functioning of the cluster

The following constitute the basic assumptions for the functioning of the NEPTUN Cluster of Excellence for Manufacturers:

- The Cluster shall be established within the structures of the Faculty of Mechanical Engineering and Ship Technology (FMEST) of Gdansk University of Technology, as a result of the NEPTUN project.
- The objective of the Cluster is associated with the realization of activities connected with R&D activity, innovative activity and development of staff (realization of projects, perfecting the educational processes, promotion of science and forming close links between industry and academia.
- The Cluster anticipates the cooperation of various groups of partners representing, in the first place, scientific/research and business entities, with the support of local and regional authorities.
- Cluster areas of interest and operation: areas and entities associated with and involved in the development of Industry 4.0.
- Territorial range of the Cluster: international cooperation, although in the initial stage mostly Polish companies will form the Cluster.
- Persons associated with the development of the Cluster: professor Mariusz Deja, Marek Chodnicki PhD (FMEST) - coordinators of the Cluster, professor Anna Lis, Anna Wendt, MSc, Faculty of Management and Economy, GDANSK TECH – consultants.

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2.2.3 Planned stages of the development of the Cluster

The development of the Cluster was divided into three stages, in which specific targets are to be achieved.

Stage I – Strategy, Financing and Organizational Structure. In this stage, cluster strategy and plan of the action will be formed. Cluster strategy will have a form of a document created in cooperation with the Advisory Board. At this stage, decisions regarding the financing of the Cluster shall be made, possible sources include: sponsoring, membership fees, projects, external financing from national and international sources. As far as organizational structure is concerned, entry barriers will be defined, members database will be established and working groups/project groups shall be initiated.

Stage II – Communication. In this stage the type and specification of cluster meetings will be defined, a dedicated platform for internal and external communication will be launched – it will be based on IT technologies of various kinds. In terms of networking, motivation methods will be defined, events within the Cluster and outside its structure will be attended by the members. At this stage new members and partners will be sought for, to enhance the operation and growth of the Cluster. Also, steps towards the intrenationalization of the Cluster shall be taken: partnership and consortia will be initiated and established to allow participation in international projects. The Cluster shall also initiate and realize projects directed at the internationalization of the Cluster and its members. Participation of the Cluster and its members in international events and networking will be ensured.

Stage III – development of innovation, development of personnel, impact on the environment. In this stage, project groups, project consortia, research groups will be formed. NEPTUN Cluster and its members will realize innovative and R&D projects (e.g. development of green technologies), the Cluster will also shape new trends in industry. Cluster and its members will become involved in the education of staff who will join the Industry 4.0 companies. As far as impact on the environment is concerned, the Cluster will represent the interests of its members (monitoring of the current situation, getting involved in the legislative work, lobbying, etc.). The Cluster will also support the authorities by providing consulting services, involvement of the public authorities in conducting and creating policies beneficial for the companies and industry, and development of the areas which fall into the field of Cluster and its members' interests. These areas will be intensively promoted by incresing the awareness through conferences, training sessions, workshops, etc.).

3. Conclusions

Advisory Board is necessary and beneficial for the establishment of the Cluster of Excellence for Manufacturers. It will not only provide help and support in the initial stages of the formation of the Cluster, but will also play an important role once the Cluster is up and running. Once the Cluster has its legal entity fully established, the operation of the Advisory Board will be

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formalized and its role will be clearly defined. In the future, the Advisory Board will play an important role in the NEPTUN Cluster of Excellence for Manufacturers.

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4. Appendix

Summary of the survey results

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Kwestionariusz ankiety - Klaster Doskonałości dla Wytwórców

28 Odpowiedzi | 13:12 Średni czas ukończenia | Aktywny Stan

1. Nazwa firmy

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Odpowiedzi

Najnowsze odpowiedzi
"PRS S.A."
"MECHANIKA RADMOR Sp. zo.o."
"Rotor- Vent "

2. Branża

28
Odpowiedzi

Najnowsze odpowiedzi
"Certfikacja, Nadzory Techniczne, Szkolenia "
"produkcja"
"wentylacyjna"

3. Strona internetowa firmy

24
Odpowiedzi

Najnowsze odpowiedzi
"prs.pl"
"www.mechanikaradmor.pl"
"www.rotor-vent.com"

4. Osoba kontaktowa (imię, nazwisko, stanowisko)

28
Odpowiedzi

Najnowsze odpowiedzi
"Sławomir Bałdyga, Dyrektor "
"Roman Jakubek, Prezes"
"Michał Tur, Viveprezes"

5. Adres e-mail do osoby kontaktowej

28
Odpowiedzi

Najnowsze odpowiedzi
"slawomir.baldyga@prs.pl"
"roman.jakubek@mechanikaradmor.pl"
"mt@rotor-vent.com"

6. Telefon do osoby kontaktowej

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Odpowiedzi

Najnowsze odpowiedzi
"+48 603112886"
"603640047"
"605962343"

7. Czym zajmuje się Państwa firma?

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Odpowiedzi

Najnowsze odpowiedzi

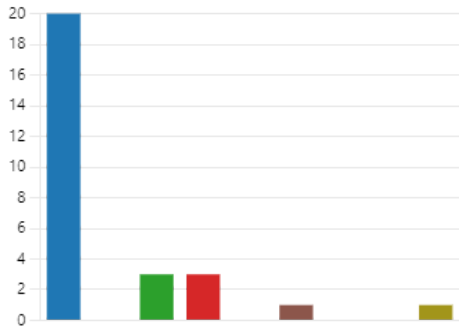
"PRS to międzynarodowe towarzystwo klasyfikacyjne, które zajmuje się asp...

"produkcja specjalistyczna dla firm z branży militarnej, kolejowej, energetyk...

"Firma o charakterze produkcyjnym central wentylacyjnych przemysłowych....

8. Forma prawna

spółka handlowa	20
spółdzielnia	0
spółka cywilna	3
osoba fizyczna prowadząca dzia...	3
fundacja	0
stowarzyszenie	1
organizacja społeczna	0
szkoła/uczelnia	0
Inne	1



9. Forma własności

państwowa (publiczna)	7
prywatna z kapitałem krajowym	17
prywatna z kapitałem zagranicz...	4

10. Liczba pracowników zatrudnionych w firmie

do 9 osób	5
od 10 do 49 osób	7
od 50 do 249 osób	7
od 250 do 499 osób	1
500 i więcej	8

11. Czy jesteście Państwo już członkiem innego klastra, jeśli tak to jakiego?

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Odpowiedzi

Najnowsze odpowiedzi

"IACS, PTMEW, FORUM OKRĘTOWE, WINDEUROPE, PFTM, POMORSKA PLA...

"nie"

" "

12. Czy jesteście Państwo zainteresowani członkostwem w Klastrze Doskonałości dla Wytwórców?

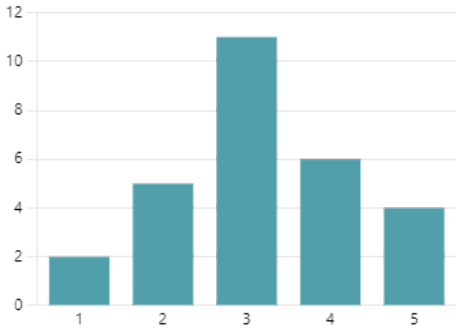
tak	16
nie	0
trudno powiedzieć	12

13. Czy życzycie sobie Państwo otrzymywać dalsze informacje w związku z Klastrem Doskonałości dla Wytwórców?

tak	27
nie	1

14. Na ile oceniacie Państwo swój poziom wiedzy na temat Przemysłu 4.0? Odpowiedź proszę zaznaczyć w skali od 1 do 5, gdzie 1 oznacza niski poziom wiedzy, a 5 wysoki poziom wiedzy.

3.18
Średnia ocena



15. Czy mają Państwo doświadczenie w obszarze Przemysłu 4.0.? Jeżeli tak, to czego ono dotyczy?

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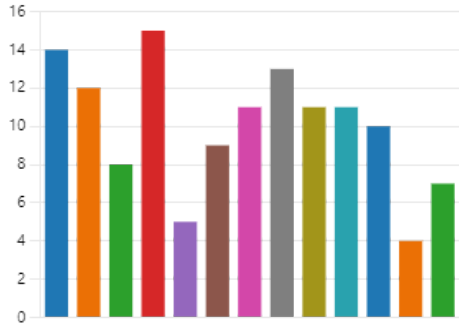
Odpowiedzi

Najnowsze odpowiedzi
"Korea - przemysł stoczniowy, Samsung, DSME, HHI-HYUNDAI Japonia - pr...

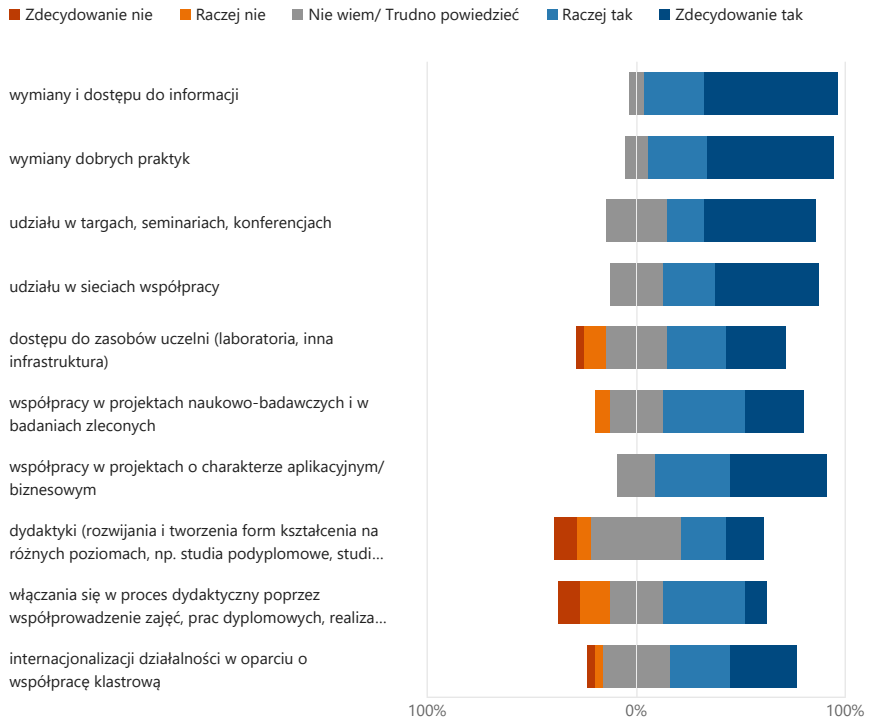
16. Poniżej zostały wymienione Techniki Przemysłu 4.0. Proszę o zaznaczenie, które z nich mieszczą się w obszarze Państwa zainteresowań (można zaznaczyć więcej niż jedną odpowiedź).

urządzenia (roboty) mobilne	14
Internet rzeczy (IoT)	12
technologie lokalizacji	8
współpraca człowiek-robot (HM...	15
poświadczenia, wykrywanie osz...	5
druk 3D	9
inteligentne sensory	11
analiza dużych zbiorów danych (...	13
wielowymiarowa współpraca z k...	11
rozszerzona / wirtualna rzeczywi...	11
obliczenia w chmurze (cloud co...	10
wytwarzanie w chmurze (cloud ...	4
Inne	7



17. Poniżej znajduje się lista oczekiwań względem współpracy w Klastrze Doskonałości dla Wytwórców. Prosimy o wybranie jednej odpowiedzi w wierszu.

W ramach współpracy w Klastrze Doskonałości dla Wytwórców jesteśmy/ bylibyśmy zainteresowani działalnością w aspektach:



18. Czy firma chciałaby współpracować w ramach Klastra Doskonałości dla Wytwórców w innych niż wyżej wymienionych obszarach? Jeśli tak, to w jakich?

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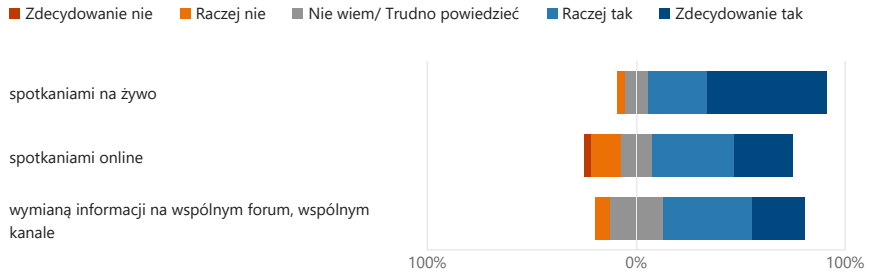
Odpowiedzi

Najnowsze odpowiedzi

19. Planowane są spotkania członków Klastra Doskonałości dla Wytwórców. Prosimy o wybranie jednej odpowiedzi w wierszu.

W ramach współpracy w Klastrze Doskonałości dla Wytwórców bylibyśmy zainteresowani:



20. Czy mają Państwo pomysły, które mógłby być już teraz przedmiotem współpracy w ramach Klastra Doskonałości dla Wytwórców? Jeśli tak, to jakie?

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Odpowiedzi

Najnowsze odpowiedzi

"- Digital Twin - morska energetyka wiatrowa - Połączenie procesów rzeczy...