

*ZERO-enabling Smart networked control framework for Agile cyber
physical production systems of systems*

D7.4 - Zero-SWARM Community Activity Report.R1

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List of Abbreviations

Abbreviation	Description
CPSoS	Cyber-physical Systems of Systems
DIH	Digital Innovation Hub
EoI	Expression of Interest
I4MS	ICT Innovation for Manufacturing SMEs
SMEs	Small and medium-sized enterprises
WP	Work Package
UGC	User-Generated Content
KPI	Key Performance Indicator

Executive Summary

The D7.4 “Community Activity Report.v1” presents Zero-SWARM’s efforts within the online community as defined in Task 7.2 (“Community building, DIH connection and EU clustering”). This document fits into the “WP7 - Impact Maximization: Exploitation, Communication, Dissemination & Standardization”.

This deliverable's major goal is to present Zero-SWARM's ongoing efforts and changes to recruit and engage community members as well as advance the project's goals through the community. This involves a variety of marketing activities in addition to the efficient use of the consortium's resources, such as expertise in the field of manufacturing and communications to reach a wider network of stakeholders.

This deliverable presents the most recent structural changes in the community, now being hosted under the Smart Manufacturing community. Furthermore, this deliverable is structured using the inbound marketing funnel which corresponds to the users’ journey within the community starting from acquisition, through to retention and finally an action plan for the upcoming next steps and KPIs overview.

1 Introduction to the Zero-SWARM community

The Zero-SWARM community has been launched and it is hosted under the following URL: <https://spaces.fundingbox.com/spaces/smart-manufacturing-zero-swarm-1>

The Zero-SWARM community is the place of reference where all project stakeholders can come together, interact, gain visibility, showcase their technology or services, collaborate with peers, and access the latest information about the project and engagement opportunities. As an integral component of the project's communication ecosystem, the community offers the highest potential for user engagement and dynamic content dissemination, as it adapts along the project's progression.

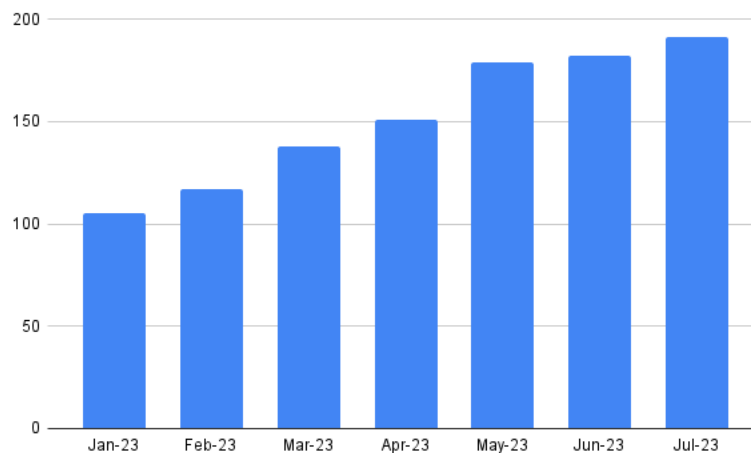


Figure 1: The evolution of Zero-SWARM community members between January and July 2023

The community is built using FBA's Spaces platform and was launched in the M3 of the project. It will remain live throughout the entire project duration, ensuring continuous accessibility. The Zero-SWARM community aims to reach 400 engaged community members. Below is the evolution of the number Zero-SWARM community members throughout the last 6 months.

As of the completion of this document, the main space of the community has attracted 195 members who have joined and actively participate in the community. The following figure shows the structure of the Zero-SWARM community.

Smart Manufacturing / THE-TESTING-PLACE / ZERO-SWARM

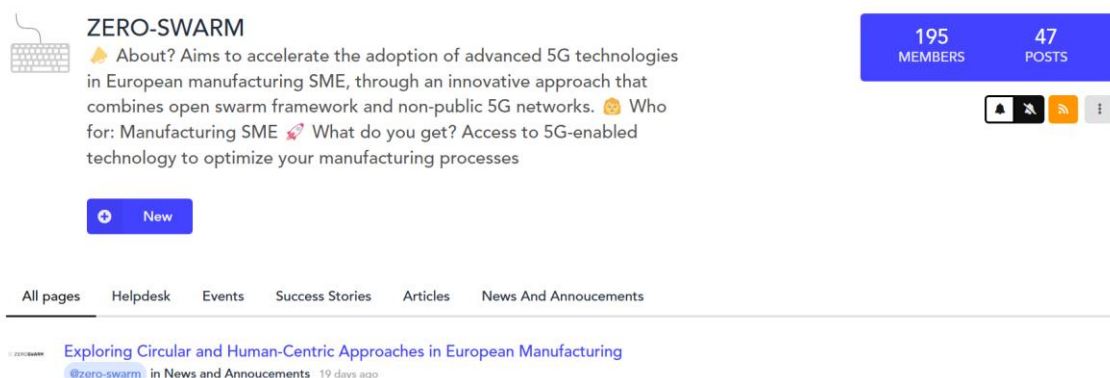


Figure 2: Screenshot of the Zero-SWARM community homepage

2 Zero-SWARM community Demographics

2.1 Users by location

Registered users are asked to share their location; hence Zero-SWARM can monitor where they are located. Below is the map showcasing the community members by location. The majority of members come from Europe, but there are also users from other locations across the world. The highest percentage of users come from Spain (26.3%), Italy (9.9%) and Poland (8.8%).

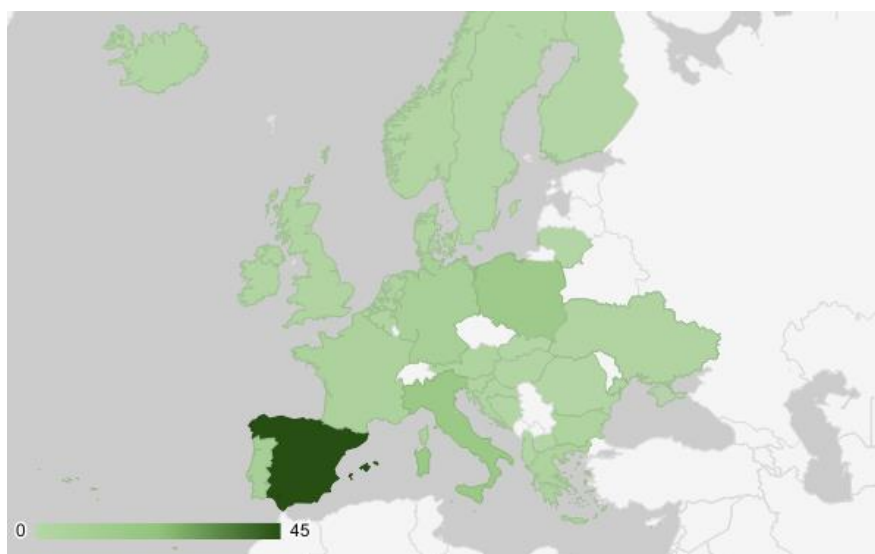


Figure 3: Geo distribution of the Zero-SWARM community members

2.2 Users by organization type

Below is the chart showcasing the breakdown of members by organisation type. The biggest group of members are indeed SMEs (48.5%), followed by public administrations (16.2%) and corporate entities (14.1%). Nonetheless, the members of the Zero-SWARM community are overall all-rounded and are in line with the projects' target audience.

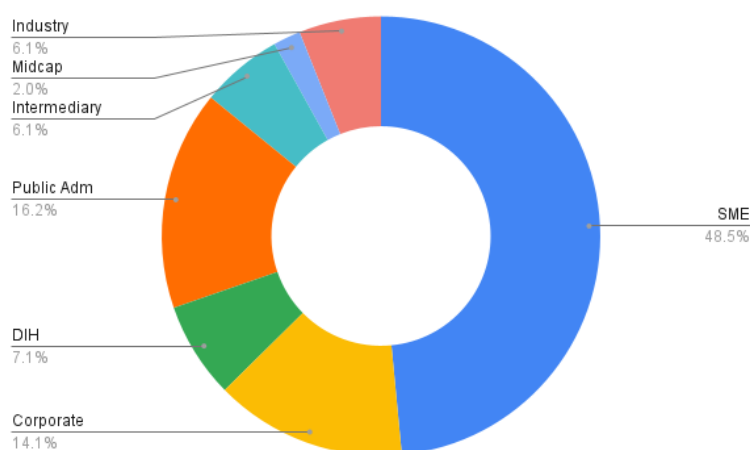


Figure 4: Members breakdown by the organisation type

3 Updates on the Structure of the Zero-SWARM community

3.1 New community Location

The [Zero-SWARM community](#) is the general virtual space of the project, whose purpose is to be fed with useful, curated content (articles, news, announcements, useful information in the form of social posts...), related to the promotion of the project's milestones, advances, outcomes, as well as any other valuable content for Zero-SWARM stakeholders.

In this community, members can share articles, events, news, questions, files. Also, they can have live discussions. Furthermore, collections are used to provide a better structure for the content inside the community and navigate through it.

Although the community started out as an integrated extension of the I4MS community, strategically utilising the synergies that already existed, a decision was made to set out on a transformative journey in order to create a more interconnected and cohesive community that is centred around the thriving European manufacturing sector, taking shape as the Smart Manufacturing community.

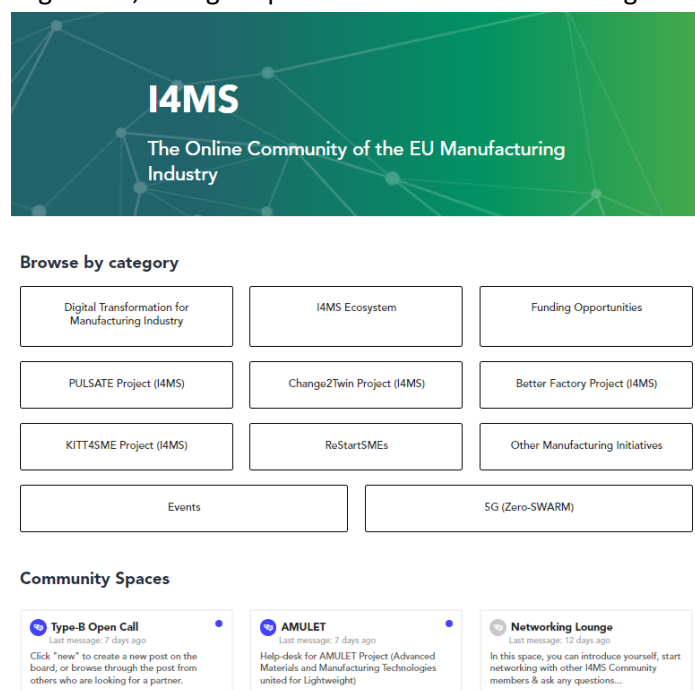


Figure 5: The I4MS community

Furthermore, the Smart Manufacturing community provides a seamless experience to users, by enabling them with an improved channel for content creation and collaborative efforts.

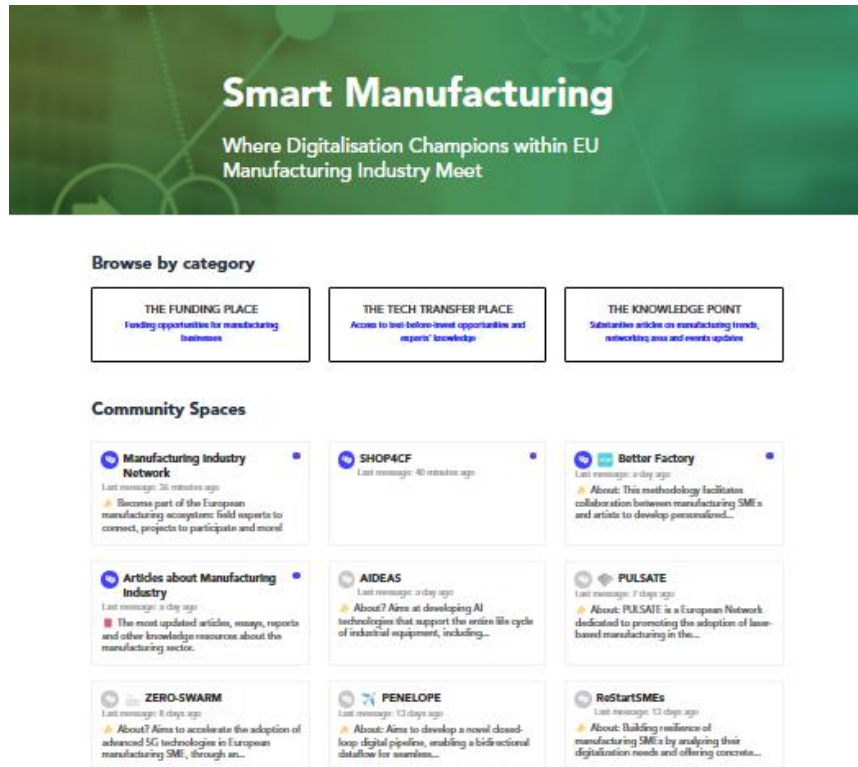


Figure 6: The Smart Manufacturing community

Additionally, the Smart Manufacturing community, just like the previous I4MS community, implies a significant advantage regarding member acquisition:

1. Zero-SWARM events, news, and pilots will be displayed to all members of the Smart Manufacturing community.
2. Zero-SWARM has a dedicated space within the Smart Manufacturing community homepage. Members who sign up to be part of the Smart Manufacturing community can access the Zero-SWARM area.
3. In the Smart Manufacturing community, Zero-SWARM community users can easily access other related projects, which helps improve collaborative efforts and create synergies to attract more end-users.
4. Zero-SWARM content can be included in the Smart Manufacturing' newsletter with over 1000 subscribers.

3.2 New Collections

As stated in D7.3, the collections serve as a vital cornerstone of the platform, offering users an enhanced opportunity to connect, interact, and engage with the vibrant community. The figure below depicts the previous collection setup.

5G (Zero-SWARM)

ZERO-enabling Smart networked control framework for Agile cyber physical production systems of systems


Advisory Board
 Backstage of the project - Space for Consortium members and Communication Managers

News & Events
 Discover our latest news and events!

Zero-SWARM General Chat
 An open space for Zero-SWARM stakeholders to interact and network.

Collections

- All
- Insights
- Posts
- Helpdesk
- Announcements
- Events

Figure 7: Previous Zero-SWARM collections

As such, in order to improve user engagement and empower content creation, the community has expanded on its collections. Below are the updated collections.

All pages
 Helpdesk
 Events
 Success Stories
 Articles
 News And Announcements


 Exploring Circular and Human-Centric Approaches in European Manufacturing

@zero-swarm in News and Announcements 15 days ago

Uncover the Path to a Sustainable and People-Focused Future for Manufacturing SMEs

announcement


 Enhancing the production of Bladed Disks (BLISKs) with 5G

@zero-swarm in Articles 10 days ago

Together with Ericsson, Fraunhofer IPT works to enhance industrial process control and quicken fault detection.

article


 5G vs 4G: Understanding the Differences

@zero-swarm in News and Announcements 20 days ago

Our lives will improve with 5G, and it will open the door for fresh ideas. But how do 5G and 4G differ from one another? What is the...

announcement

Figure 8: Screenshot of the current collections on the Zero-SWARM community

Zero-SWARM Success Stories	Zero-SWARM Help Desk	Zero-SWARM Events	Zero-SWARM News and Announcements	Zero-SWARM Articles
Discover Zero-SWARM success stories	Find the answers to all the questions about the Zero-SWARM project	Dissemination space for Zero-SWARM- related events	Dissemination space for Zero-SWARM- related news and announcements	Dissemination space for Zero-SWARM- related longer content formats or articles

Table 1: Zero-SWARM new collections

4 Engagement Strategy efforts

4.1 Acquisition

The Zero-SWARM community aims to reach 400 community members by the end of the project in 2024, with all the concepts, updates and opportunities offered by the project. This ambitious goal requires a multi approach strategy across several platforms to get “as close as possible” to the target audience.

4.1.1 Owned media channels

Regarding the project’s owned media platforms, the website serves as the main platform to showcase the project. As such, this platform includes not only a call to action encouraging visitors to become members of the community, but also includes blog posts that allow users to be better informed about the community before signing up.

Additionally, a feature has been implemented that guarantees a summary of the latest publications within the Zero-SWARM community is prominently displayed on the website's homepage. This takes the format of a summary and provides visitors with a quick glimpse of the content of the community. Potential end-users can then have access to these full articles and discussions within the community itself.

The display of article summaries on the website's homepage acts as a teaser, igniting curiosity among visitors about the amount of high-quality content that is within the community. Firstly, it serves as an incentive for visitors to register and become members. Secondly, this approach promotes a thriving and interactive digital ecosystem within the community. With access to the entire articles, members can fully immerse themselves in discussions, responding to articles, and exchanging ideas with fellow enthusiasts, thought leaders, and experts.

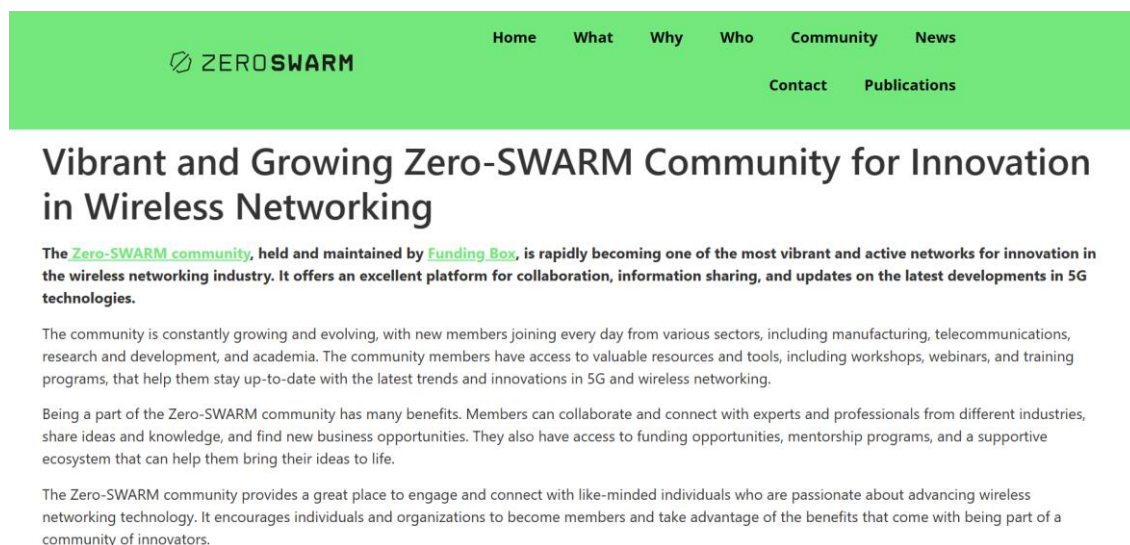


Figure 9: Zero-SWARM website blog post presenting the project community

Furthermore, the project's social media channels serve as a captivating platform that consistently exposes the target audience to a plethora of compelling content, meticulously crafted to captivate their attention and kindle their interest.

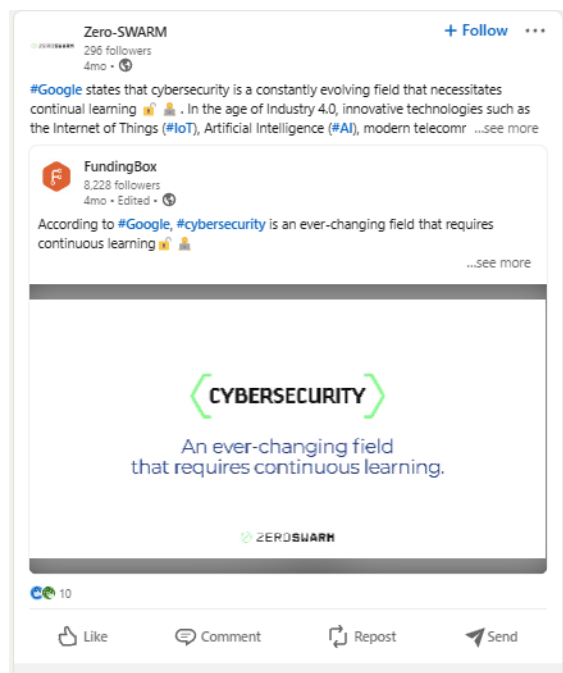


Figure 10: LinkedIn repost for a community CTA



Figure 11: Twitter repost for community CTA



Figure 12: Promotion of a community post on the project's social media pages

Below are the metrics for the social media posts so far published that lead to the community:

Link	Title	FUNDING OR ORGANIC CHANNELS (SOURCE)	Reactions	Impressions	Reposts	TOTAL	
						(1) Landing page visits	(2) Unique visitors
https://www.linkedin.com/posts/zeroswarm_manufacturing-iot-activity-7010515097928228864-W5fe?utm_source=share&utm_medium=member_desktop	5G & IoT (Internet of Things) for the manufacturing sector	LinkedIn	22	-	7	14	8
https://twitter.com/ZeroSwarm/status/1604750037082591232?s=20		Twitter	3	118	3	3	2

https://www.linkedin.com/posts/zeroswarm_5g-manufacturing-activity-7049029017139605504-u3x3?utm_source=share&utm_medium=member_desktop	5G-enabled AGVs: from manual to fully-automated manufacturing	LinkedIn	19	-	5	59	31
https://twitter.com/FundingBox/status/1621102380535418882?s=20	5G-enabled AGVs: from manual to fully-automated manufacturing	Twitter	4	74	3	6	4
https://www.linkedin.com/posts/zeroswarm_iiot-ai-industry40-activity-7038887702452174850-HOog?utm_source=share&utm_medium=member_desktop	Cybersecurity challenges in the era of Industry 4.0	LinkedIn	21	-	3	24	13
https://twitter.com/ZeroSwarm/status/1633134702247788552?s=20	Cybersecurity challenges in the era of Industry 4.0	Twitter	3	104	3	6	4
https://spaces.fundingbox.com/spaces/i4ms-5g-for-manufacturing-community/640617fc3890916e220b2c22?utm_campaign=Piece of Content 3-	Modern production logistics: challenges &	Twitter	3	89	2	12	5

2&utm_medium=community&utm_source=Twitter	opportunities for machine building						
https://www.linkedin.com/posts/zeroswarm_zero-swarm-community-activity-7046396715976802304-sWwo?utm_source=share&utm_medium=member_desktop	Industry 4.0 Cyber Security Challenges – How real is it?	LinkedIn	9	-	-	24	8
https://twitter.com/FundingBox/status/1640610150036783105?s=20	Industry 4.0 Cyber Security Challenges – How real is it?	Twitter	2	72	1	10	2

Table 2: Number of landing page visits and unique visitors by social media post

4.1.2 Shared and Earned media channels

Zero-SWARM leverages the consortium's and supportive partners' channels to enhance the visibility of the community. FundingBox's online platforms, such as newsletters, social media, and other communities, effectively showcase this collaboration.

Unleash the Power of 5G in Factories!

Say goodbye to latency problems and welcome a flawless manufacturing landscape. Here's the secret ingredient: Configured Grant (CG) scheduling in 5G! See impressive results in latency performance and resource allocation.

 [Dive in here!](#)

Figure 13: Community post in the FundingBox newsletter

Post	Channel	Reactions (Likes and comments)	Reposts
https://www.linkedin.com/posts/the-	LinkedIn	21	7

funding-box-group-s-l- _google-cybersecurity- iot-activity- 704134791209357721 7-t- 4V?utm_source=share &utm_medium=memb er_desktop			
https://www.linkedin. com/posts/the- funding-box-group-s-l- _zero-swarm- community-activity- 704638904960694681 6- FaC2?utm_source=sha re&utm_medium=me mber_desktop	Linkedin	13	7
https://www.linkedin. com/posts/the- funding-box-group-s-l- _5g-manufacturing- fundingchampions- activity- 704430908022340812 9- djYQ?utm_source=sha re&utm_medium=me mber_desktop	Linkedin	3	0
https://www.linkedin. com/posts/the- funding-box-group-s-l- _5g-manufacturing- fundingchampions- activity- 702869433477434982 4- K5sc?utm_source=sha re&utm_medium=me mber_desktop	Linkedin	13	3
https://www.linkedin. com/posts/the- funding-box-group-s-l- _5g-manufacturing- fundingchampions- activity- 702869433477434982	Linkedin	13	1

4-K5sc?utm_source=share&utm_medium=member_desktop			
https://www.linkedin.com/posts/the-funding-box-group-s-l-_google-cybersecurity-iot-activity-7041347912093577217-t-4V?utm_source=share&utm_medium=member_desktop	Linkedin	21	7
https://www.linkedin.com/posts/the-funding-box-group-s-l-_google-linkedin-manufacturing-activity-7024331443484958720--9_H?utm_source=share&utm_medium=member_desktop	Linkedin	7	1
https://www.linkedin.com/posts/the-funding-box-group-s-l-_5g-manufacturing-networks-activity-7008355285652156416-WNse?utm_source=share&utm_medium=member_desktop	Linkedin	11	1

Table 3: Zero-SWARM Social Media posts in FundingBox's channels

Additionally, cooperating with other projects through content sharing, webinars, and events has raised awareness about the project and attracted new community members. These collaborations have greatly expanded the number of community users, improved the quality of work and increased access to resources.

For example, in cooperation with ZDZW and R3GROUP, the community's most recent online workshop consisted of a 60-minute open discussion aimed at exploring the latest trends in human-centred manufacturing, address circularity in Industry 4.0, and show how to overcome the skill barriers. Find the post here: <https://spaces.fundingbox.com/spaces/smart-manufacturing-zero-swarm-1/646dc2adb958a423ba33fa84>

4.2 Retention

The Zero-SWARM community has concentrated on developing a variety of content that cater to the requirements and interests of the majority of the community users to retain them inside the community.

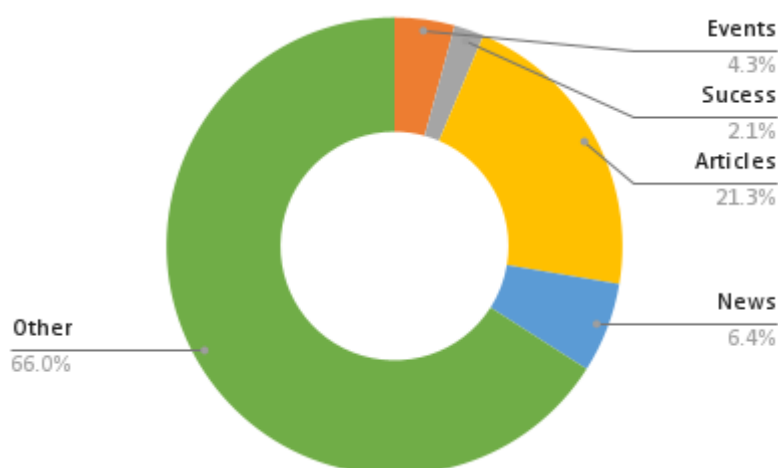


Figure 14: Breakdown of community posts by collection

The majority of the community posts belong to the “Other” at 66%, followed by ‘Articles’ at 21.3% and ‘News and Announcements’ at 6.4%. The “Other” category entails UGC (User-Generated Content) that is not categorised under any other collection. Overall, the community has currently 47 posts, with an average of 183 views and 2 reactions per publication.

4.2.1 Partner collaboration

The partner collaboration focuses on consistently working with project partners to assure consistent content delivery. This content can take the shape of educational resources on topics like 5G, Smart Manufacturing, Cybersecurity, smart factories, amongst others.

Publication Name	Partner	Date	Link	Impressions/Opens	Reactions (Comments and likes)
The benefits of 5G for the Manufacturing Sector	HWE	7-Nov-2022	https://spaces.fundingbox.com/spaces/i4ms-5g-for-manufacturing-community/6368fc30400e090ef6ce923e	1232	6
5G & IoT (Internet of Things) for the manufacturing sector	NEU/OPT	14-Dec-2022	https://spaces.fundingbox.com/@jorgegc/63986508400e090ef6cea460	365	5

5G-enabled AGVs: from manual to fully-automated manufacturing	RWTH/CCI	24-Jan-2023	https://spaces.fundingbox.com/spaces/i4ms-5g-for-manufacturing-community/63cf9987bb7b0405d123b610	301	8
Cybersecurity challenges in the era of Industry 4.0	CERTH	6-Mar-2023	https://spaces.fundingbox.com/@zero-swarm/6405b7f63890916e220b2b3c	310	3
Modern production logistics: challenges & opportunities for machine building	RWTH	6-Mar-2023	https://spaces.fundingbox.com/@zero-swarm/640617fc3890916e220b2c22	72	1
Industry 4.0 Cyber Security Challenges – How real it is?	CERTH	6-Mar-2023	https://spaces.fundingbox.com/@zero-swarm/64061c563890916e220b2c23	77	1
Implementing Configured Grant (CG) for Low-Latency Communications in Open-Source 5G NR Simulators	UMH	30-May-2023	https://spaces.fundingbox.com/spaces/smart-manufacturing-zero-swarm-1/6475c348b958a4acd833fb84	64	2

Table 4: Partner publications inside the Zero-SWARM community

As of the completion of this report, there are overall 7 partner publications. In total, these publications have 2407 impressions/opens, with an average of 344 impressions per publication. In terms of reactions, there are a total of 26 reactions to these publications, including comments and likes, and an average of 4 reactions per publication. Ultimately, the impact of these efforts on the community has been nothing short of transformative. The exponential growth in user numbers is proof of the effectiveness of this approach, capturing the attention of end-users, who are drawn to the platform's content and interactions.

5 Next steps

Since its inception, the Zero-SWARM community has achieved notable milestones and encouraged beneficial participation among its members. It is crucial that Zero-SWARM builds on these successes and plans next steps. As a result, this section describes the actions Zero-SWARM will take to maintain and accelerate the growth of its community.

1. Strengthen communication channels

As part of the plan to strengthen communication channels, Zero-SWARM intends to implement a monthly community digest in the upcoming months until the end of the project. This entails sending

the community members, each month, a newsletter email with all the publications in the community during that month. Other targeted publications will be also sent via email to further highlight their relevance. This strategy is specifically designed to drive user engagement up within the community, while also keeping members informed about key information areas of the project, such as, for example, the launch and end of the EoI.

2. Expand outreach efforts

In order to further drive forward Zero-SWARM's outreach efforts and raise awareness, the project's social media platforms will be leveraged by sharing a monthly community post to lead potential users to the community, while also consistently sharing relevant community posts in these platforms. This strategy also includes organising events, webinars and workshops, especially throughout the EoI process, that are open to the public and promote them through various channels.

3. Enhance the community's role during the EoI process

Throughout the Expression of Interest (EoI) process, the community will take an active role in its dissemination strategy. As explained in D7.1, the platform will start referencing the EoI procedure in its content before its launch, so that members are made aware of the approaching EoI. When the EoI begins, a publication will be published in the community, outlining the aim of the EoI, the application process, and the specific conditions for prospective candidates. Midway through the EoI, a reminder publication is issued within the community in order to sustain momentum and attract additional interest.

Furthermore, the EoI will be deliberately embedded into the community content updates, ensuring maximum visibility and reaching a larger network of potential participants.