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Abstract:

This document depicts the progress achieved concerning the dissemination and communication activities carried out in the first year of the project. In specific, the identified KPIs are monitored and assessed with respect to their target values. All aspects of the project's dissemination strategy are reported to be evaluated in terms of the adoption of potential correction measures in consequent deliverables.

Keywords:

Dissemination, Communication, Dissemination and Communication Plan, target groups, KPI monitoring, diffusion channels metrics, key messages, scientific dissemination, on-site dissemination, dissemination package

Revision History

Revision	Date	Description	Author (Organisation)
V0.1	15.09.2020	First version of the document.	Achilleas Marinakis (ICCS), Anthousa Karkoglou (ICCS)
V0.2	09.10.2020	Second version of the document.	Achilleas Marinakis (ICCS), Anthousa Karkoglou (ICCS)
V0.3	11.11.2020	Integration of contributions from different partners	Achilleas Marinakis (ICCS), Anthousa Karkoglou (ICCS), Santiago Cáceres (ITI), Andreu Belsa (UPV), Shayan Ahmadian (UKL), Jan Jürjens (UKL), Christos Gizelis (OTE), Andreas Metzger (UDE)
V0.4	12.11.2020	Integration of EVR contribution	Achilleas Marinakis (ICCS), Anthousa Karkoglou (ICCS), Carlos Eduardo Torres (EVR)
V0.5	10.12.2020	Addition of dissemination channels' metrics Addressing of internal review comments from ITI	Achilleas Marinakis (ICCS), Anthousa Karkoglou (ICCS), Andreu Belsa (UPV), Matilde Julian (UPV)
V1.0	18.12.2020	Integration of UDE and PRO internal review comments	Achilleas Marinakis (ICCS), Anthousa Karkoglou (ICCS), Andreu Belsa (UPV), Matilde Julian (UPV)
V1.1	22.12.2020	Final Version	Santiago Cáceres (ITI)

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More information available at https://DataPorts-project.eu

Copyright Statement

INDEX

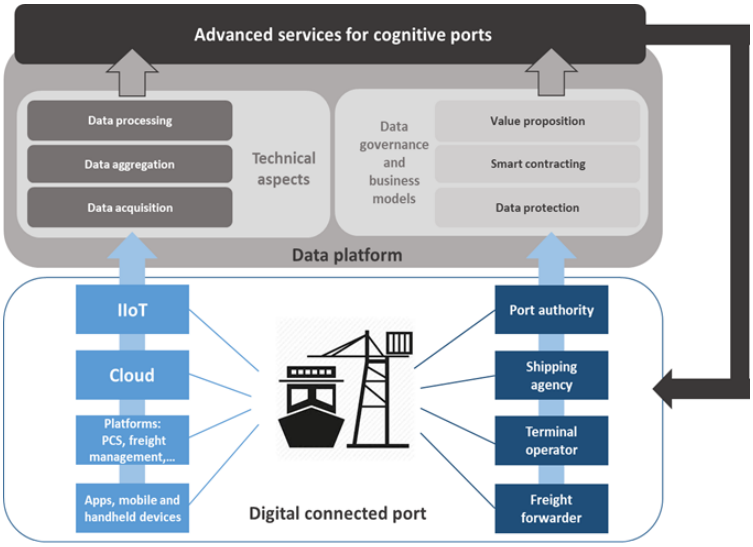
LIST OF FIGURES

LIST OF TABLES

1 INTRODUCTION

1.1 DATAPORTS PROJECT OVERVIEW

DataPorts is a project funded by the European Commission as part of the H2020 Big Data Value PPP programme, and coordinated by the Technological Institute of Informatics (ITI). DataPorts rely on the participation of 13 partners from five different nationalities. The project involves the design and implementation of a data platform, its deployment in two relevant European seaports connecting to their existing digital infrastructures and addressing specific local constraints. Furthermore, a global use case involving these two ports and other actors and targeting inter-port objectives, and all the actions to foster the adoption of the platform at European level.



Hundreds of different European seaports collaborate with each other, exchanging different digital data from several data sources. However, to achieve efficient collaboration and benefit from AI-based technology, a new integrating environment is needed. To this end, DataPorts project is designing and implementing an Industrial Data Platform.

The DataPorts Platform aim is to connect to the different digital infrastructures currently existing in digital seaports, enabling the interconnection of a wide variety of systems into a tightly integrated ecosystem. In addition, to set the policies for a trusted and reliable data sharing and trading based on data owners' rules and offering a clear value proposition. Finally, to leverage on the data collected to provide advanced Data Analytic services based on which the different actors in the port value chain could develop novel AI and cognitive applications.

DataPorts will allow establish a future Data Space unique for all maritime ports of Europe and contribute to the EC global objective of creating a Common European Data Space.

1.2 DELIVERABLE PURPOSE AND SCOPE

Specifically, the DoA states the following regarding this Deliverable:

This document will describe the dissemination and communication activities carried out in the corresponding period, will monitor the KPIs achieved, and the adoption of potential correction measures.

The purpose of this document is to report on the results of DataPorts overall Communication and Dissemination strategy through various channels during the first year of the project. In scope of this purpose, the present document aims at the monitoring of the dissemination routes of the project.

The project's dissemination activities focus on web presence and the design and production of promotional material such as factsheets, brochures, presentation templates, project presentations, and website content. Moreover, they address social media, publications of scientific papers, as well as the presentation of the project at key stakeholder events.

Moreover, under the scope of the present document falls the documentation of the project's communication to its diverse target groups, which encompass the relevant domains, industry sectors, research and developer communities, and End Users.

Apart from the planned dissemination activities, the progress of the KPIs described in the Grant Agreement needs to be evaluated for potential correction measures to be adopted. Therefore, purpose of the present document is the proposal of correction measures based on the reported metrics and dissemination results. The proposed measures are going to be evaluated in D6.5 – Dissemination and Communication Plan deliverable (M18) and play a crucial role in the dissemination plan re-evaluation for the next dissemination period.

1.3 DELIVERABLE CONTEXT

Its relationship to other documents is as follows:

Primary Preceding documents:

- D6.1 Dissemination and Communication Plan (M06): This deliverable describes the dissemination plan in terms of the activities that are planned to take place within the project's lifespan, as well as, the target audiences and messages of the project.

Primary Dependent documents:

- D6.5 Dissemination and Communication Plan (M18): The second iteration of the D6.1 deliverable is going to calibrate the dissemination and communication plan according to the results of the dissemination reporting that are included in the present document.
- D6.3 Report of impact and outreach results (M12): This deliverable complements the present document, as it includes the report of the outreach results and impact of DataPorts during its first year.

1.4 DOCUMENT STRUCTURE

This deliverable is broken down in the following sections:

- **Section 1** includes the Introduction of the document which entails the description of the scope, purpose, and structure of the present document. In addition, document dependencies and context are presented to the reader.
- **Section 2** recaps the dissemination activities that were planned and specified during the first six months of the project and reported in D6.1. Moreover, the reporting tools that are going to be utilized hereunder are presented.
- **Section 3** includes information about the dissemination activities through the major dissemination channels that include the Website of the project, and the social media platforms. The corresponding KPIs are presented and evaluated for the first year of the project.
- **Section 4** addresses the dissemination package of the project. The creation of the project's identity and the diffusion of this identity in a consolidated manner is described through the created material.
- **Section 5** contains information about the on-site dissemination events that took place during the first year of the project, including virtual events that diffuse the project's presence and goals.
- **Section 6** describes the scientific dissemination of the project, listing the papers that were published in the context of DataPorts project, as well as its educational contributions.
- **Section 7** contains the conclusions that are drawn from the KPI achievement and the reporting of all the dissemination activities of the first year of the project. This section also includes the correction measures that are proposed and can be leveraged during the re-evaluation of the dissemination plan.

Annexes

- **Annex 1 (Section 9):** Global Dissemination Matrix presents the aggregated and overall dissemination activity for the DataPorts project during 2020.

1.5 DOCUMENT DEPENDENCIES

This document is part of an iteration of living deliverables. This is the first version that is delivered in M12. The second iteration of the deliverable is planned to be delivered in M24, and the third and final variant in M36. Each of these deliverables are destined to report the outcomes and efficiency of the dissemination activities that take place during the intermittent time periods.

2 DISSEMINATION PLANNING AND EVALUATION

Prior to the reporting of the dissemination and communication activities that were performed in the first twelve months of the project's lifespan, took place the planning of the dissemination strategy and actions that will lead to the fulfilment of the KPI's that are described in the Grant Agreement of the project. Even though this planning is thoroughly described and analysed in the D6.1 Dissemination and Communication Plan deliverable [1], a short summary of the diffusion foundations described there is presented hereunder. Furthermore, it is considered crucial that the tools for the reporting and evaluation of the dissemination activities and the corresponding KPIs are presented within this document as well.

2.1 DISSEMINATION ACTIVITIES PLANNING

The first semester of the project laid the foundations for the creation of DataPorts identity by preparing the dissemination tools that are going to be utilized in the next months of the project, as well as, by raising awareness concerning its content and value. After the creation of the logo, a website was created during the first month of the project. Moreover, a social media strategy was formed during these months in terms of which the project's accounts in the respective social media platforms were created, while the presence of the project in various press media was established. In addition, up until M06 several scientific publications were achieved in terms of DataPorts innovation, and the project's introductory presence at events aimed at its promotion.

In accordance with D6.1 deliverable, the table that includes all dissemination and communication activities including their periodicity, responsibility and task division is depicted below. Even though not all dissemination activities were addressed in this dissemination period, a consistent overview of the diffusion activities was considered crucial to be depicted here. The activities listed below are considered as a guideline to evaluate and monitor accurately the manifestation of DataPorts dissemination strategy occurring until M12. Moreover, the present document is aligned with the structure of the table included below, in such a way that the reader can gain an insight of the progress and effectiveness of the dissemination strategy of the project.

Type of action	Dissemination action / channel		How often?	Responsibility and task division
COMMUNICATION	Update of the website		Periodically. When there is new information to include (deliverables, news, announcements...). From M1 to after the end of the project.	UPV is the responsible of Website. All partners must provide content and collaborate.
	Dissemination and promotional materials (flyer, roll-up, infographics)		Provide 1 generic version during the first year. This version can be improved during the project. Furthermore, new versions will be provided during the project adapted to promote specific events or milestones of the project.	UPV coordinate the creation of the generic materials. Mainly, with the support of the coordination, impact manager and the leaders of the pilots. Each partner is responsible for adapting the generic material to their needs.
	Creation and use of communication campaigns		When milestones or notable events occur related with the project.	Partners involved in the campaigns. With the supervision of the UPV, coordination and the Impact support group.
	Social networks	Twitter	Post approximately 1 tweet per week. But the frequency may be higher when it is required to promote an event or milestone more strongly.	UPV and ITI manage the social network. All partners must provide content and interact with the DataPorts Twitter account. Direct collaboration with partners who want to promote an event is expected during the six weeks before and the week after the event.
		Linkedin	Provide own content approximately 1 time per month.	UPV manages the social network. All partners must provide content and interact with the DataPorts Linkedin account.
		Youtube	Portal for linking DataPorts' videos or clips or presentations. Not periodically updated.	UPV manages the account and coordinates a plan to provide a video presentation about a milestone achieved in the project. Thematic videos series (e.g. about data sharing, container tracking, blockchain, AI...). All the content (project presentation, architecture, used technologies, pilots ...) must be created by an assigned responsible with the collaboration of the coordination, impact support group and technical committee.
		Researchgate	Portal for linking DataPorts' scientific publications. Not periodically updated.	Any partner who wants to link a scientific publication.
		Slideshare	Portal for linking DataPorts' slide presentations. Not periodically updated.	Any partner who wants to upload a presentation.
		Flickr	Portal for linking DataPorts' photos or pictures. Not periodically updated.	Any partner who wants to upload a picture.
	Dissemination package	Videos	2 videos during the project. A project presentation video will be provided before M18. It will be the official and promotional video of the project. Another video will be provided at the end of the project related with the demonstrations.	UPV coordinates the creation of the official video. Mainly, with the support and supervision of the coordination, impact manager, the leaders of the pilots and technical committee. All partners must provide ideas and content to the video.
		Blogs	Linked to the website. It will be modified when there are milestones to highlight. Its use will increase from the second year of the project on.	All partners must provide at least two news or blog posts during the project related to the project. The UPV will select this news and include it on the DataPorts website.
		Press releases	When milestones or notable events occur related with the project.	
		Newsletters	At least 3 newsletters will be produced during the project (at least one per year). But the desired objective is starting from M12, a new newsletter will be provided approximately every 6-9 months.	Coordinated by UPV. The continuous support and supervision of OTE and ITI. The selection of contents involves all DataPorts managements bodies. All partners must to contribute in the content.

Figure 1 – Activity Planning (i)

Type of action	Dissemination action / channel	How often?	Responsibility and task division
ON-SITE DISSEMINATION	Presentations at industry events	At least 2 per year. But, taking into account that some events of first year are postponed due COVID-19.	Event responsible partner must lead the on-site activity. Innovation manager is the responsible to plan, coordinate and monitor the innovation activities, providing the linking with industry beyond the consortium. UPV provides help in the diffusion and communication of the event and monitors the correct progress of the preparation of the event.
	Presentations at scientific conferences	At least 2 per year.	
	Bilateral discussions with stakeholders	Linked to the impact creation task. Minimum of 5 during the project lifetime.	
	Participation in industry events and fairs	There is no specific periodicity. Periodic attendance at interesting events for the project is recommended.	
	Demos/booths of DataPorts	At least 2 through the project duration.	
	Dissemination workshops organized by DataPorts	2 during the project lifetime.	
	On-site visits to field trials	2 during the project lifetime.	
SCIENTIFIC DISSEMINATION	Publications at top tier conferences	At least 2 per year.	Technical committee support the preparation and organization of papers for conferences identified or proposed by the Dissemination Manager. All partners are continuously analysing whether their technical advances are keen to be published.
	Publications at journals		
	Publications at magazines		
	Open source contributions	At least 1 per year.	WP2, WP3, WP4 and WP5 partners. Some of the project partners involved in those WPs use Open Source code or contribute to the Open Source communities. Alternatively, some of those partners can contribute to Standards, be they open standards or other.
	Training sessions using E-learning platform	At least 1 through the project duration.	Technical committee select and provide the content. Impact support group ensure the impact of the training sessions.
	Organization of webinars	At least 2 per year.	Depending on the content of the webinar (technical, business, impact, innovation ...) there will be a specific role or management body in charge of the webinar and selecting and providing the content of the activity. The dissemination manager will be responsible for helping to disseminate and promote the webinar.
	World-wide dissemination tours and seminars at universities	At least 1 per year.	Coordinated by the UPV. Partners who are university or interested in this field will be mainly involved.

Figure 2 – Activity Planning (ii)

2.2 EVALUATION APPROACH AND MONITORING

2.2.1 Dissemination Matrix

A major tool in monitoring and evaluating the status of the dissemination and impact status of DataPorts is the Excel file named “Events and Dissemination”. This file is shared amongst all partners as a reporting tool that can be utilized to document any dissemination action and milestone.

This file is organized into spreadsheets, each one of them representing a different aspect of the dissemination strategy of the project. Thus, each spreadsheet is structured differently in order for the reporting of each activity to be tailored to the needs of each dissemination approach. The YouTube spreadsheet, for example, contains a table that describes the type of each video, its title, duration, publication date and link, as well as the partners that were involved in its creation and the rationale behind it.

The visual summary of the "Events and Dissemination" excel file is the Global Dissemination matrix that can be found in Section 9 (Annex 1). This matrix contains all the dissemination information until M12 in an aggregated manner regarding the aspects of on-site, scientific, and virtual diffusion dissemination.

2.2.2 KPI Assessment

Concerning the assessment of the KPI's fulfilment, it is measured according to the categories depicted in Table 1. The percentage of completion is noted by each Task leader in the Dissemination Matrix tool. The defined categories contribute in monitoring closely the degree of KPI fulfilment and the respective adjustment of the course of action.

Categories		General actions or measures
0	Immediate action necessary	KPI is below the expected value. Improve the dissemination activities relevant to KPI
1	Needs further attention	KPI is slightly below expectations. Further measures for improvement need to be discussed and addressed to partners
2	Good progress	KPI is on track with the dissemination plan and strategy. No corrective actions are necessary. Continue with the monitoring
3	Overachievement	KPI exceeds the expectations! The dissemination plan is possibly under evaluated. Shift or concentrate efforts to other tasks (dissemination or not) with lower performances

Table 1 – Diffusion KPI evaluation

For the rest of the quantitative indicators that are defined by the DataPorts consortium, their progress can be evaluated with the description of achieved milestones without the definition of a strict target value. Each Task leader elaborates on the progress of each quantitative indicator that addresses their dissemination activities. The additional potential quantitative indicators of the dissemination activities are included in the following paragraphs, as a measure to define the progress of the dissemination strategy and its impact according to a multi-level analysis with an overall documentation.

3 DISSEMINATION CHANNELS

The dissemination channels include the website and all the social media platforms. Moreover, since there is a dedicated section in the project's website that contains the blogposts written by the consortium, the Blogposts segment is also reported under the dissemination channels.

3.1 KPI FULFILMENT

Diffusion activity		Target value in Grant Agreement	Status and Category Ranking	Key Performance Indicator (KPI)	Achieved Milestones and Category Ranking	
					Current Value	Evaluation
Website	-	Website up and running until M36	Website went live in the first month of the project.	Number of accesses and visitors to the website.	25,795 accesses 10,409 visitors	Category 3: Overachievement
Blogposts	-	At least 1 per year per partner	7 Blogposts have been published in the website of the project during the second half of the first year	-	-	Category 2: Good progress
Social networks	Twitter	At least 100 new followers per year; At least 50 publications per year	The twitter account of the project has 109 followers, and 65 tweets in total.	Number of tweets per week.	1.3 tweets per week	Category 2: Good progress
	YouTube		YouTube channel has 7 subscribers, and 1 uploaded video.	Number of views.	43 views	
	LinkedIn		DataPorts LinkedIn page has 51 followers and 24 posts.	Profile views and interactions.	417 profile views and interactions	
	Research Gate & SlideShare		There are 6 research publications referenced in ResearchGate, and 2 presentations in SlideShare.	Number of reads and views.	127 reads in ResearchGate 102 views in SlideShare	
	Facebook		Facebook account is hardly being used (see Section 3.4.6)	-	-	
	Flickr		Flickr account has 4 published images.	Number of views.	47 views	

Table 2 – Dissemination Channels KPI's

In Table 2 are included the KPI's mentioned in the Grant Agreement, as well as the additional KPI's that were described in the D6.1 deliverable. According to the evaluation of each diffusion activity, the website, blogposts, and twitter account of the project have overachieved the expected metrics. On the other hand, the project's YouTube, SlideShare, and Flickr have not met the expectations in terms of attracting more followers. Nevertheless, the latter can be attributed to the fact that the project is still in the beginning of its lifetime, so these platforms were used to present the project's overview and concept. Following the development of the DataPorts Platform, more concrete outcomes and results will be communicated via those dissemination channels. Moreover, there are social media platforms that cannot act as main dissemination tools due to the nature of their content, such as Flickr. They can act, however, as subsidiary tools that enhance and complement the content of the main dissemination media, such as twitter and LinkedIn.

3.2 WEBSITE

The website is considered the main diffusion medium that aggregates and exhibits the main information and data associated with the progress of the project. For that reason, the DataPorts website is regularly enriched with new material to document and communicate all the different aspects of the project's results and outcomes. More specifically, the website is updated on a frequent basis with information about new scientific papers that are published under the auspices of the project, as well as public deliverables that exhibit the progress, objectives, and results of each period of DataPorts. Moreover, the website contains frequently updated information and footage from conferences that the project has participated in, dissemination material, as well as information about upcoming events. Lastly, the use cases of the project where the tangible result of the project's framework and innovation are included in the website's content, alongside the description of the objectives of each use case and are expected to be updated in parallel with the implementation of DataPorts Platform.

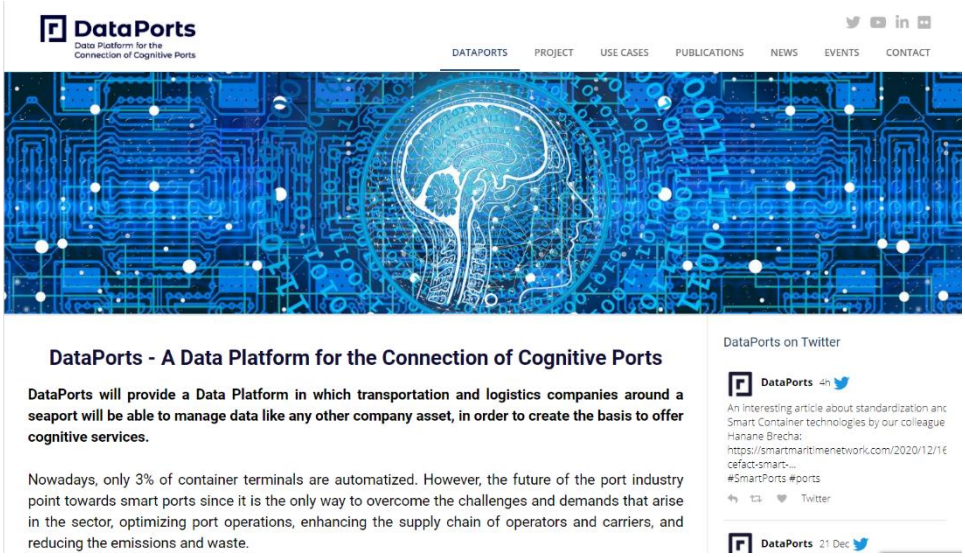


Figure 3 – Screenshot from DataPorts website

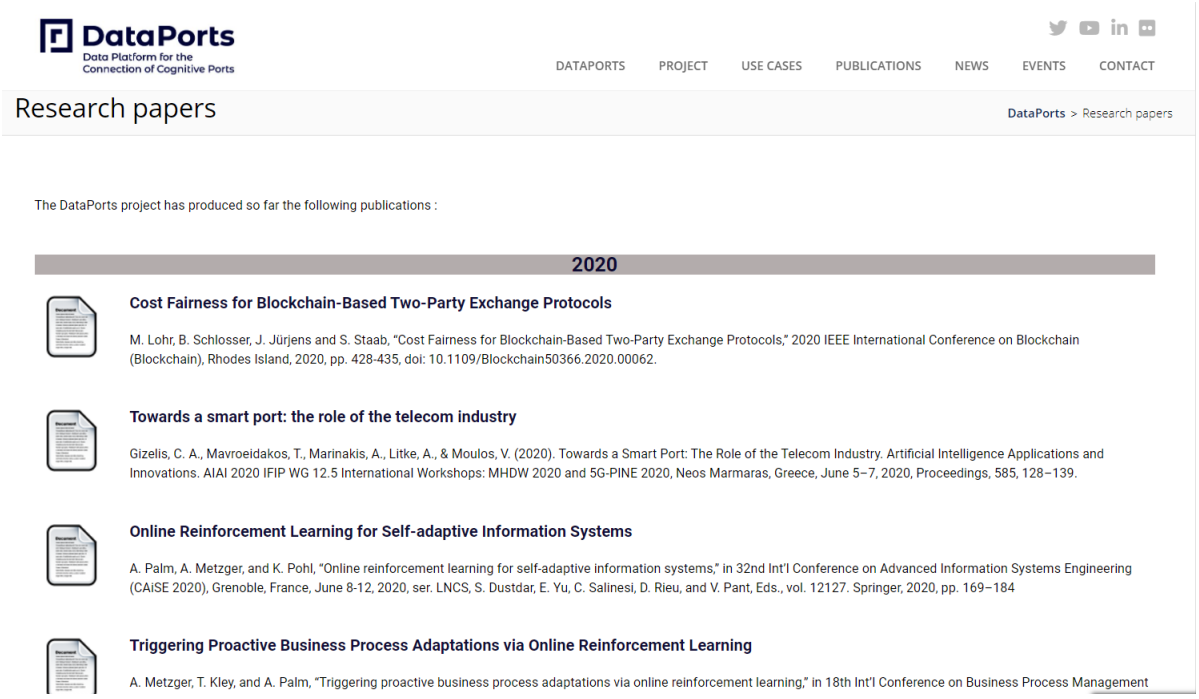


Figure 4 – Screenshot from the Publications tab in DataPorts website

3.2.1 Additional Quantitative Indicators

According to the Grant Agreement of the project, the DataPorts website should achieve the target value depicted in the corresponding column of the consolidated Table 2 – Dissemination Channels KPI's. However, during the planning of the dissemination actions and to gain a broader understanding of the effectiveness of the dissemination, additional quantitative indicators were proposed in the D6.1 deliverable [1]. These indicators were introduced to complete the monitoring of the diffusion influence of the project's website, hereunder are aggregated the results of these indicative additional metrics in combination with newly introduced metrics that contribute in the same direction.

During the first year of the project, its website had 225.795 visits and 10.409 distinct visitors.

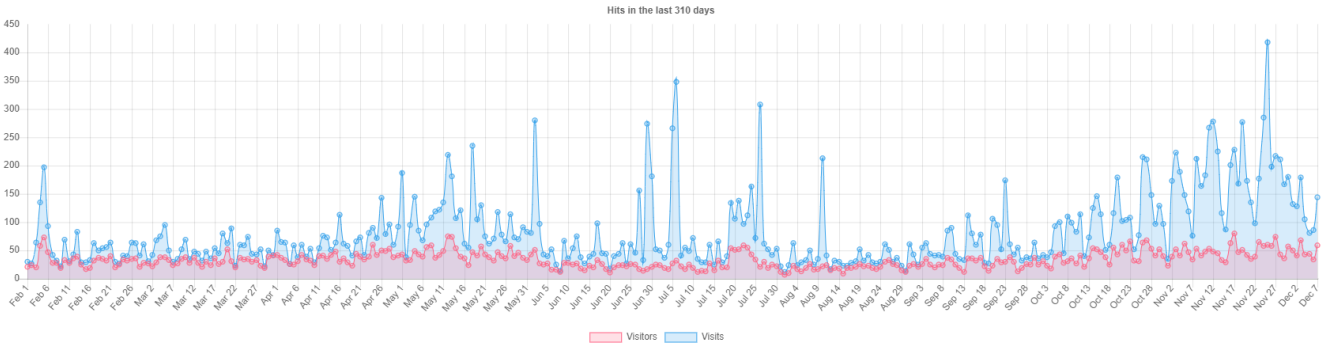


Figure 5 – Visits and unique visitors of the website during 2020

As can be seen in Figure 5, there are several time periods where the website visitors spike. Indicative peaks are related with significant dissemination activities, such as the first day of the IFIP International Conference on Artificial Intelligence Applications and Innovations on June 5, where the paper "Towards a Smart Port: The Role of the Telecom Industry" was presented. Moreover, the collaborative paper "Framework and Methodology for Establishing Port-City Policies Based on Real-Time Composite Indicators and IoT: A Practical Use-Case" with the Pixel EU project published on 24 July has probably increased the traffic towards the project's website. Furthermore, the European Big Data Value Forum – EBDVF 2020 (3-5 November) and

Infocom (4-6 November) events contributed to the diffusion of the project during November.

Below are depicted the number of visits for each of the country with the most visits in the DataPorts website. Moreover, the number of views per website component are listed below.

Rank	Country	Visitor Count
1	United States	338
2	China	234
3	Spain	130
4	France	117
5	Germany	102
6	Russian Federation	74
7	Greece	43
8	Netherlands	40
9	Romania	35
10	India	34

Table 3 – Visits per country

ID	Title	Visits
1	Home Page	12,030
2	DataPorts Concept	621
3	Overview	571
4	Consortium	546
5	Port of Thessaloniki	534
6	Local Media	460
7	Smart Containers	443
8	Deliverables	440
9	Research papers	341
10	Port of Valencia	268

Table 4 – Page views

As can be seen in Table 3 most visitors are located in countries where the project's consortium does not have any presence, i.e., the United States, China and the Netherlands. In addition, most of the visitors are interested in the project's concept, overview, and consortium.

As far as the number of pages that are accessed during each session, each User accesses 1.322 pages on average. Moreover, during 2020 there were 160 redirections from social media platforms towards the project's website, and 1.782 from online search.

3.3 BLOGPOSTS

Within DataPorts website is located a dedicated tab which leads to blogposts. These blogposts stem from outcomes and deliverables that occur along the lifespan of the project and are written by the same partners

that have contributed to the corresponding milestones. Through this section a reader can be fully informed on a higher level about DataPorts, the technological sectors that the project addresses, as well as the project's vision, goals, and achievements.

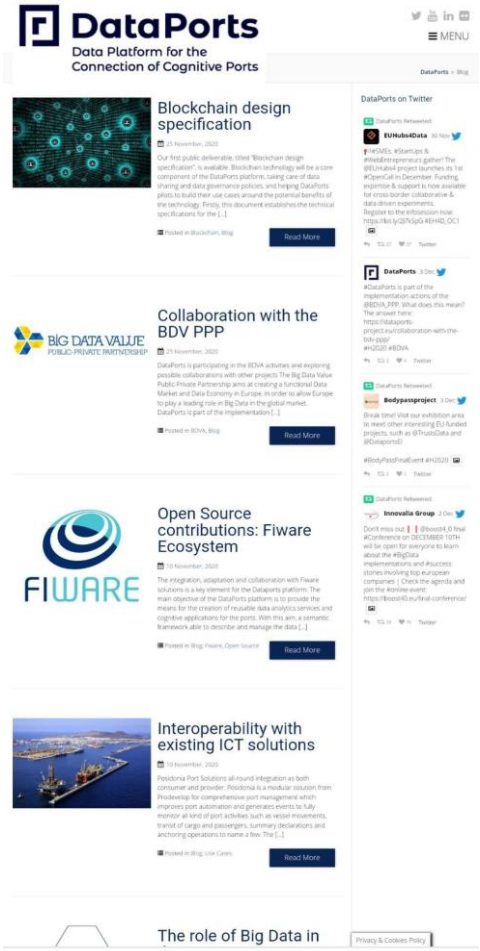


Figure 6 – Screenshot from the Blog section in DataPorts website

The publication dates and views of the blogposts on the website are the following.

Title	Categories	Date	Hits
Collaboration with other projects	Blog	Published 2020/12/14	37
Blockchain design specification	Blockchain, Blog	Published 2020/11/25	46
Collaboration with the BDV PPP	BDVA, Blog	Published 2020/11/25	73
Open Source contributions: Fiware Ecosystem	Blog, Fiware, Open Source	Published 2020/11/10	68
Interoperability with existing ICT solutions	Blog, Use Cases	Published 2020/11/10	68
The role of Big Data in the port ecosystem	Big Data, Blog	Published 2020/11/10	139
DataPorts Presentation	Blog	Published 2020/11/10	52

Figure 7 – Blogposts published in the DataPorts website during 2020

3.4 SOCIAL MEDIA

Even though the project's website is the main medium for communication and dissemination of the project, social media platforms play a crucial role in leveraging the impact of communication results concerning raising awareness of the project. Social media offer the capability of frequent updates concerning all the content created from the project's progress, while customizing the conveyed message according to the platform and its attributes, as well as the target audience.

3.4.1 Target Audiences Identified and Key Messages

The plurality of the leveraged social media platforms in combination with their broad usage by many different groups contribute to the addressing of all the identified target audiences in scope of DataPorts. More specifically, the target audiences of the project's dissemination strategy are Industry and End Users, Technology Providers, data market actors, and others, such as the academic community and government and regulatory bodies. All these audiences use and interact with more than one social media platform. Therefore, objective of the dissemination strategy, as far as social media are concerned, is the tailoring of the key messages to cater for each social media platform. Nevertheless, some of these platforms address almost exclusively specific target audiences, such as ResearchGate addresses mainly the academic community.

Following the progress of the project, each milestone and content is presented to more than one social media platforms. In this way the project's outcomes reach out to more than one target audiences and in different formats. For instance, the project's participation in a Big Data Value workshop was documented and published both in SlideShare and YouTube. In the first medium the presentation of the project was uploaded, while in the second the actual footage of the presentation was published. In this way, the exposure of this event is broadened, and the actual event is potentially communicated to all target audiences that might perform a relative search.

3.4.2 Twitter

Twitter is considered a great online communication channel to leverage visibility, generate influence, promote content, and reach out to target audiences, and especially, to capitalize on call to actions included on campaigns. For these reasons, it has been the preferred channel to communicate the news and events related with the DataPorts project.

Figure 8 – Screenshot from DataPorts twitter account

DataPorts twitter account counts 109 followers. Additional indicative metrics that were examined as far as twitter analytics are concerned follow below.

	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12
Impressions	2.8K	2.0K	792	1.1K	2.9K	1.7K	961	1.1K	1.0K	2.0K	4.2K	1.6K
Engagement rate	1.8%	0.9%	1.0%	1.0%	0.7%	1.5%	0.4%	1.4%	1.8%	1.1%	2.2%	1.6%
Link clicks	4	8	1	0	11	6	2	7	0	2	14	2
Likes	29	9	2	5	2	8	0	4	11	12	30	8
RTs	17	5	1	3	1	4	2	3	5	2	9	5
Mentions	4	3	2	15	1	0	0	2	2	2	6	2
Profile visits	149	91	71	90	44	55	9	61	63	79	456	184

Table 5 – Twitter statistics summary from M1 to M12

It is obvious that the month with the highest twitter statistics is November. As mentioned above, this is the month where the project was presented in the Infocom conference, and the European Big Data Value Forum (EBDVF) that is organized by the Big Data Value Association (BDVA) and the European Commission (DG CNECT).

3.4.3 YouTube

YouTube constitutes a great dissemination channel to increase visibility with videos as it is considered as one of the most popular social media channels. With the creation of the project's channel, it is possible for people from different target audiences to watch the corresponding content. Moreover, this platform boosts the project's visibility in search engines and directs more traffic to the other media of the project.

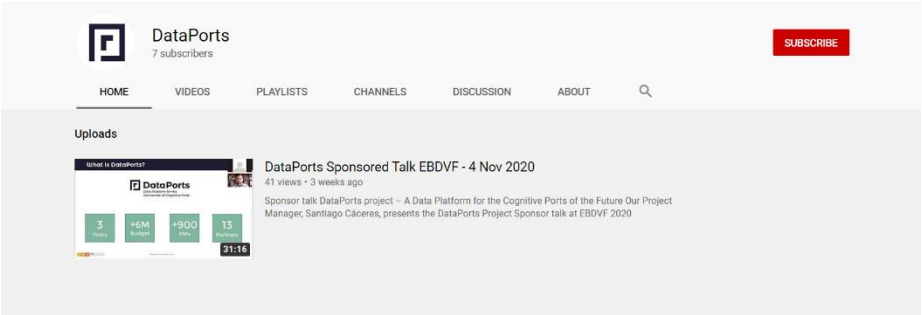


Figure 9 – Screenshot from DataPorts YouTube account

DataPorts YouTube channel counts 7 subscribers and 43 views, while total watch time is calculated as 1.1 hours. Additional YouTube metrics are depicted below.

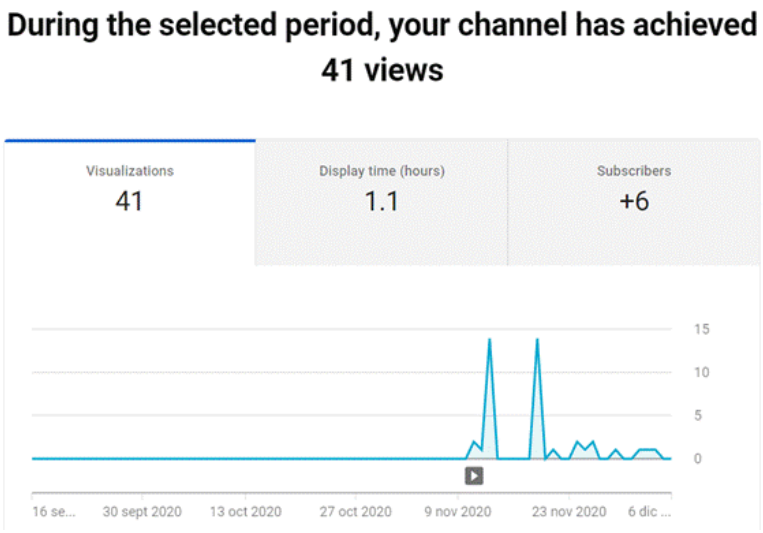


Figure 10 – Views (YouTube Analytics)

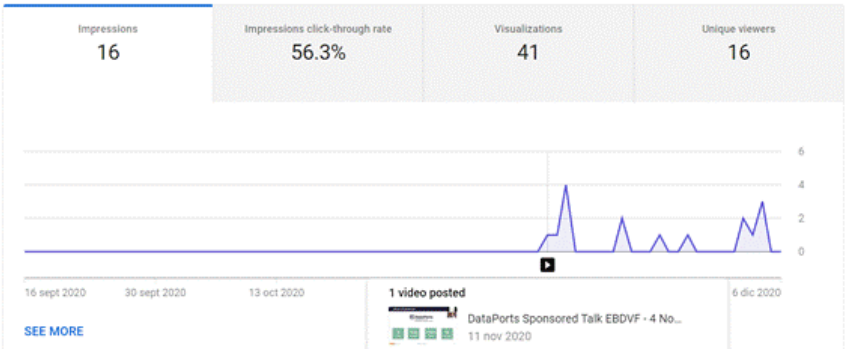


Figure 11 – Impressions (YouTube Analytics)

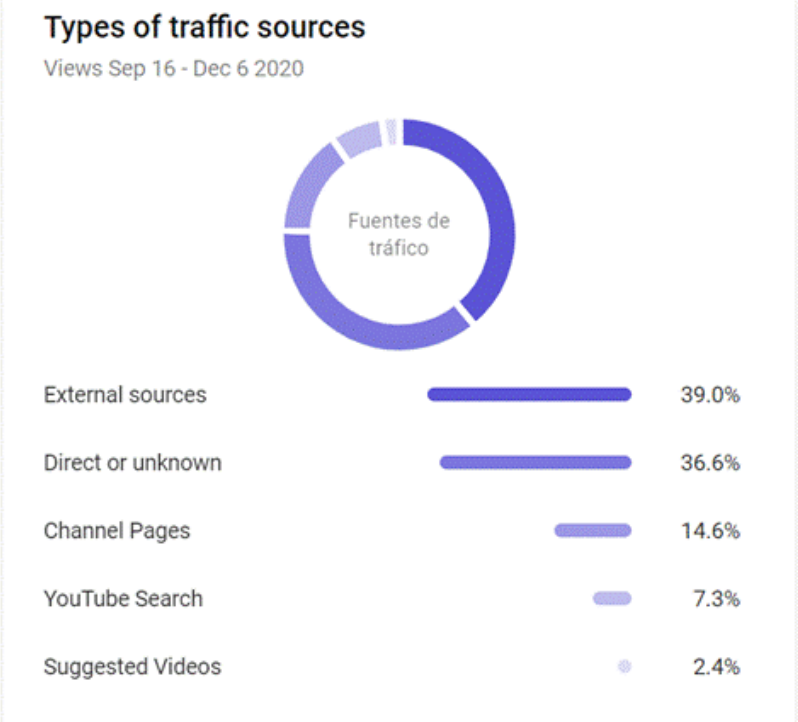


Figure 12 – Traffic sources (YouTube Analytics)

Given that DataPorts YouTube channel obtained content in November 2020, it is reasonable that the traffic

of the channel is low. According to Figure 12, most of the visits to the DataPorts YouTube channel are redirected from external sources.

3.4.4 LinkedIn

LinkedIn serves as the most significant tool in the outreach of the professional community. This medium represents an effective way to not only support social networking between professionals, but also to actively engage with different existing groups and communities, by contacting professionals, that related to the project's areas of impact, directly. The communication of the DataPorts news, events and relevant information is done using the Company Page. In addition, a personal-like account was created for DataPorts, which serves mainly as a mean to interact with other Users and pages.

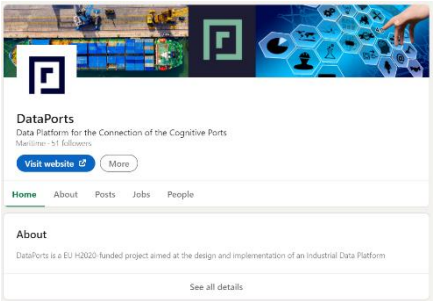


Figure 13 – Screenshot from DataPorts LinkedIn account

DataPorts LinkedIn account has 51 followers, while the engagement metrics for content posted on the platform, as well as analytics and demographics of the followers are depicted below.

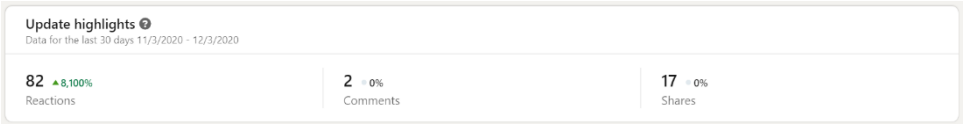


Figure 14 – LinkedIn engagement metrics for last 30 days

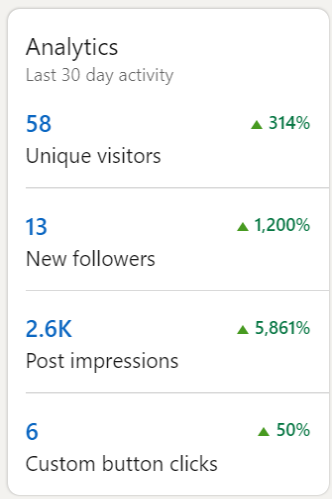


Figure 15 – LinkedIn activity for the last 30 days

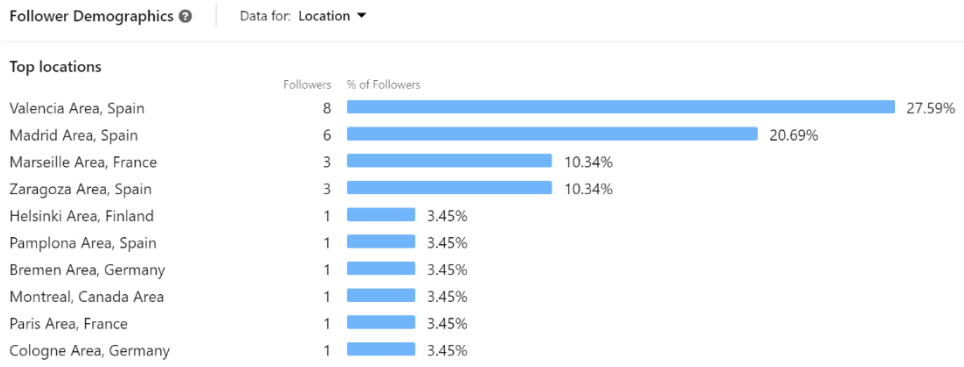


Figure 16 – LinkedIn followers demographics: location (LinkedIn Analytics)

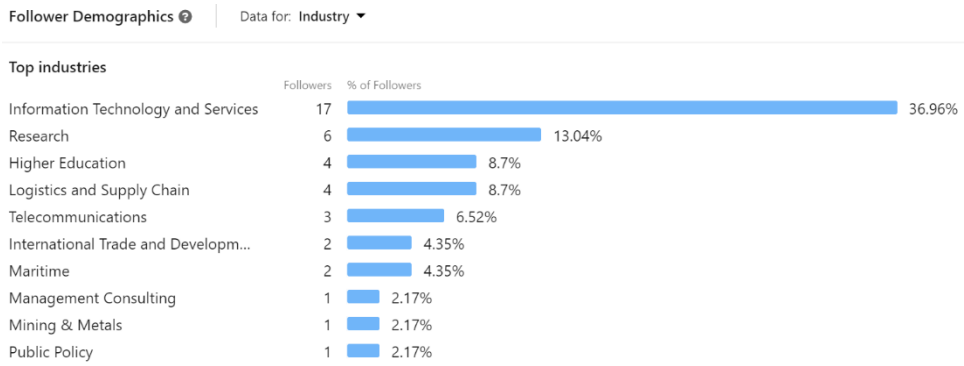


Figure 17 – LinkedIn followers demographics: industry (LinkedIn Analytics)

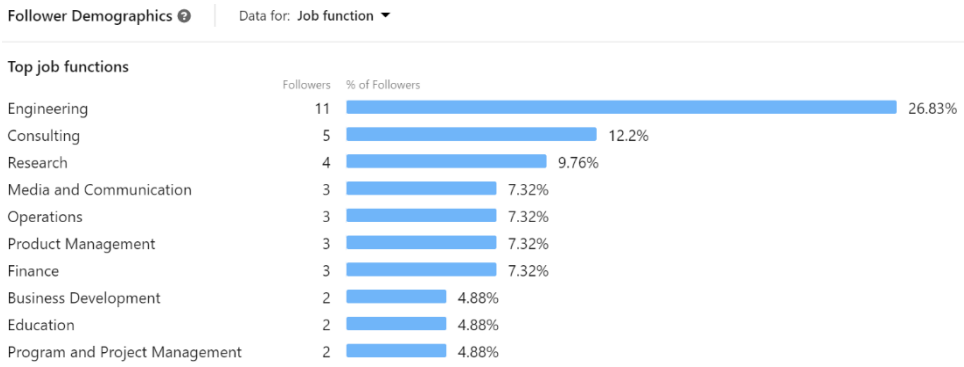


Figure 18 – LinkedIn followers demographics: job function (LinkedIn Analytics)

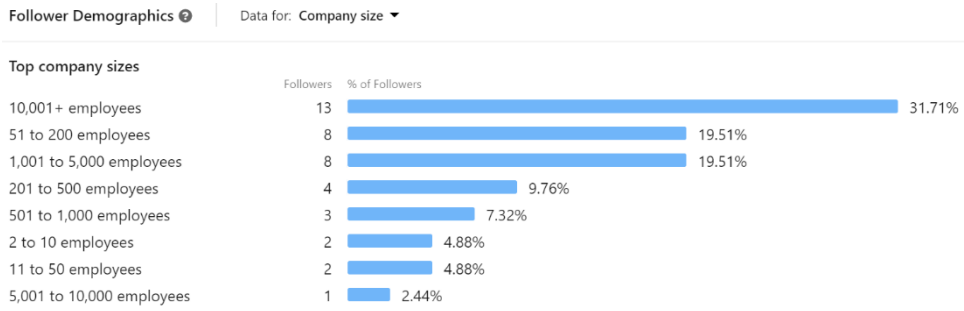


Figure 19 – LinkedIn followers demographics: company size (LinkedIn Analytics)

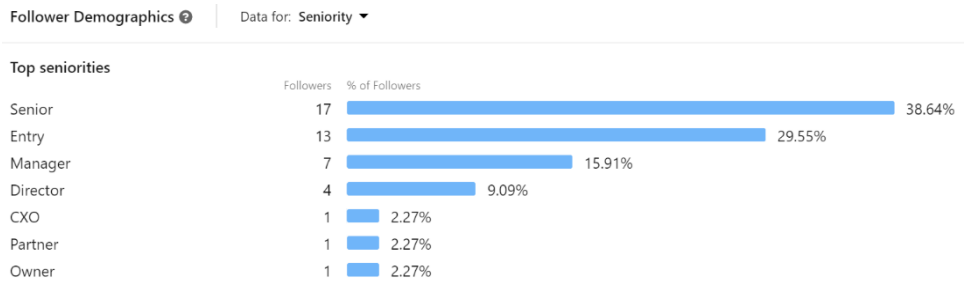


Figure 20 – LinkedIn followers demographics: seniority (LinkedIn Analytics)

According to the demographics presented above, most of the project's LinkedIn followers are in Spain, they are occupied within the Information Technology and Services, and research sectors, their job function lies within the roles of the engineer and the consultant on senior and entry levels, while their companies have more than 10.000 employees.

3.4.5 ResearchGate and SlideShare

ResearchGate is leveraged to link all scientific publications that are published under the auspices of DataPorts. In this way, the success, and metrics of the scientific publications of the project are going to be aggregated and presented in the project's account in ResearchGate. In the project's ResearchGate account there have been 127 reads.

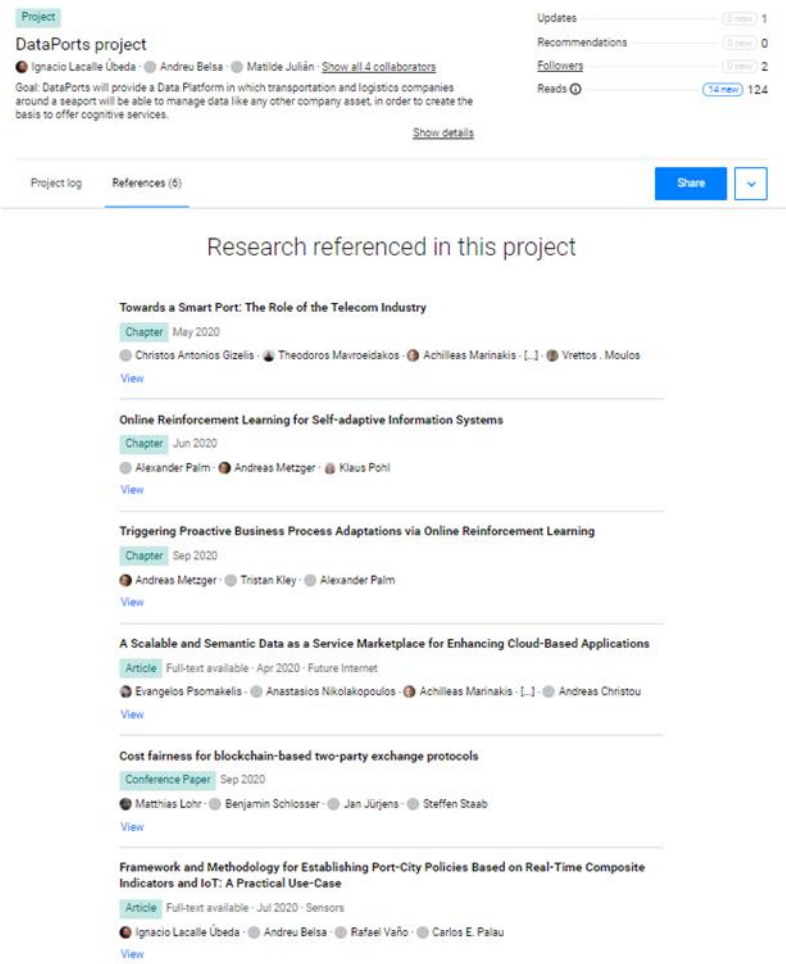


Figure 21 – Screenshot from DataPorts ResearchGate account

SlideShare is utilized as a channel for online distribution of different documentation, content and materials (i.e., presentations) of the project. This social media platform is useful to improve our stakeholder acquisition since it provides the capability of sharing online content. Moreover, DataPorts content is also available in SlideShare accounts that belong to members of the project's consortium[1].

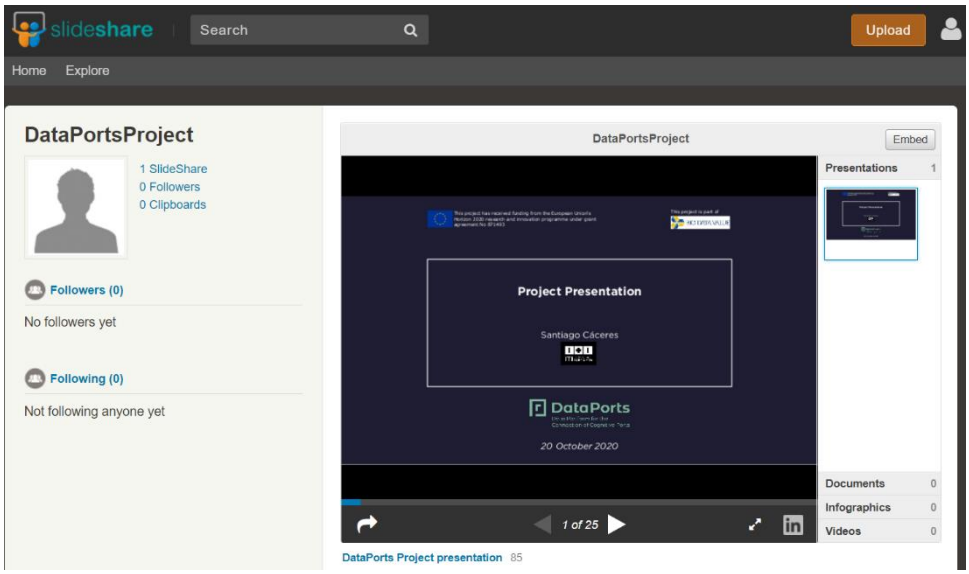


Figure 22 – Screenshot from DataPorts SlideShare

Concerning SlideShare, the views of the project's page are 102, while there have been no likes nor comments. Any additional metrics are presented below.

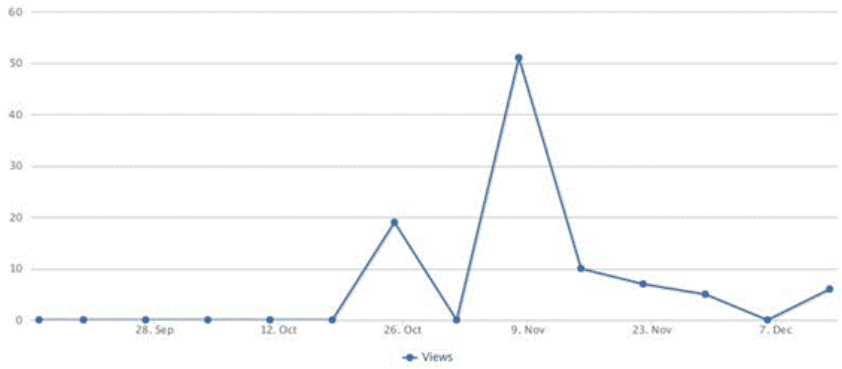


Figure 23 – Views timeline in SlideShare

[1] https://de.slideshare.net/andreasmmetzger/triggering-proactive-business-process-adaptations-via-online-reinforcement-learning

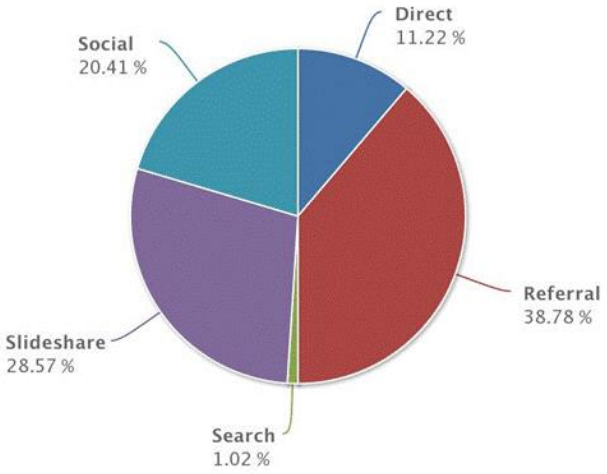


Figure 24 – Top sources that redirected to DataPorts SlideShare content

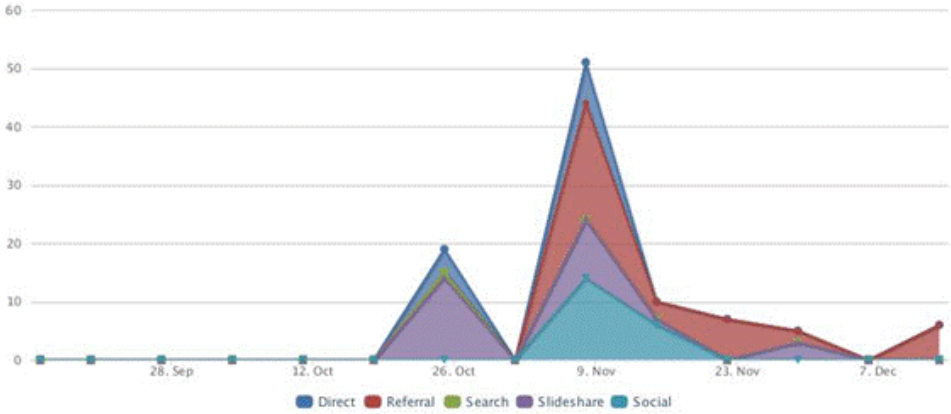


Figure 25 – SlideShare views and sources

The most visits to the SlideShare page of DataPorts have been redirected from social media and other sites that refer to it according to Figure 24. In specific, 38.78% of the SlideShare visits are due to referrals, 28.57% are sourced from within SlideShare, and 20.41% of the overall visits are redirected from social media links. The most visibility of the page is noticed in November 2020, where the project was presented in two major events as mentioned above.

3.4.6 Facebook

The Facebook account has been created and it is available, and the impact achieved through Facebook was evaluated during the first year. The result was that this platform was not one of the more habitual communication channels for DataPorts, due to its target audience, and its use did not produce any relevant impact. For these reasons, after consulting with the partners in a plenary meeting, it was decided to finalize the activities in this platform and focus the communication and dissemination activities on other more suitable channels, such as Twitter and LinkedIn.

3.4.7 Flickr

Flickr is a powerful tool for the creation of visual content regarding DataPorts meetings and events, as well as infographics and other visual material. However, in this dissemination phase Flickr is utilized as a

supporting tool for diffusion and not a main dissemination medium. As far as DataPorts content is concerned, there have been 37 views in the corresponding Flickr account.

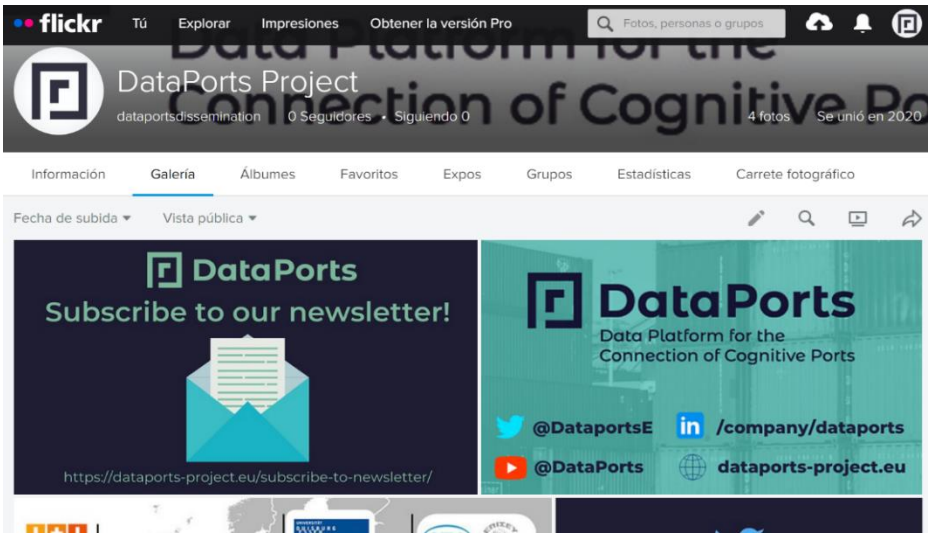


Figure 26 – Screenshot from DataPorts Flickr account

4 DISSEMINATION PACKAGE

To convey the message of DataPorts identity, the consortium of the project has created a dissemination package that will be used in all aspects of the project's diffusion and that is formed by a set of supporting material (flyers, brochures, etc.) and instructions for producing videos, blog entries, infographics, press releases and newsletters. All the components that consist the dissemination package of the project are presented below.

4.1 KPI Fulfilment

Diffusion activity	Target value in Grant Agreement	Status and Category Ranking	Key Performance Indicator (KPI)	Achieved Milestones and Category Ranking	
				Current Value	Evaluation
Dissemination package	At least 1 per year	1 dissemination package in M06 for the establishment of the project's identity	Total number of dissemination package components introduced during the project	5 dissemination components	Category 2: Good progress
Digital newsletters	At least 1 per year	The first newsletter is going to be published in December 2020 (M12)	Number of subscribers.	16 subscribers	Category 2: Good progress

Table 6 – Promotional material KPI fulfilment

Both the dissemination package and digital newsletter of the project have made significant progress during its first dissemination period. The KPI's that are described in the Grant Agreement are achieved, and the additional KPI's that were introduced in the D6.1 deliverable [1] indicate that there is significant material that describes the identity of the project, and a growing subscriber list that is going to be informed about the advances of the project in the next months.

4.2 LOGO AND CORPORATE IDENTITY

The logo, that is destined to be included in all the promotional material, was created at the beginning of the project as a significant part of DataPorts identity. After its creation, specific guidelines were provided to all partners, as how it should be used correctly in related documents and materials. This information was also included in the D6.1 deliverable. Alongside DataPorts logo, the DataPorts icon was created in accordance with the main focus of the project, which are the Ports in terms of their continuous activity and growth.

Figure 27 – DataPorts logo

4.3 SUPPORTING MATERIAL

The design of the DataPorts brochure aimed at the encapsulation of the vision and the most important objectives of the project, as well as, all the involved partners, contacts, and social media accounts, as well as, a brief overview of the Pilots.

Figure 28 – DataPorts brochure (front side)

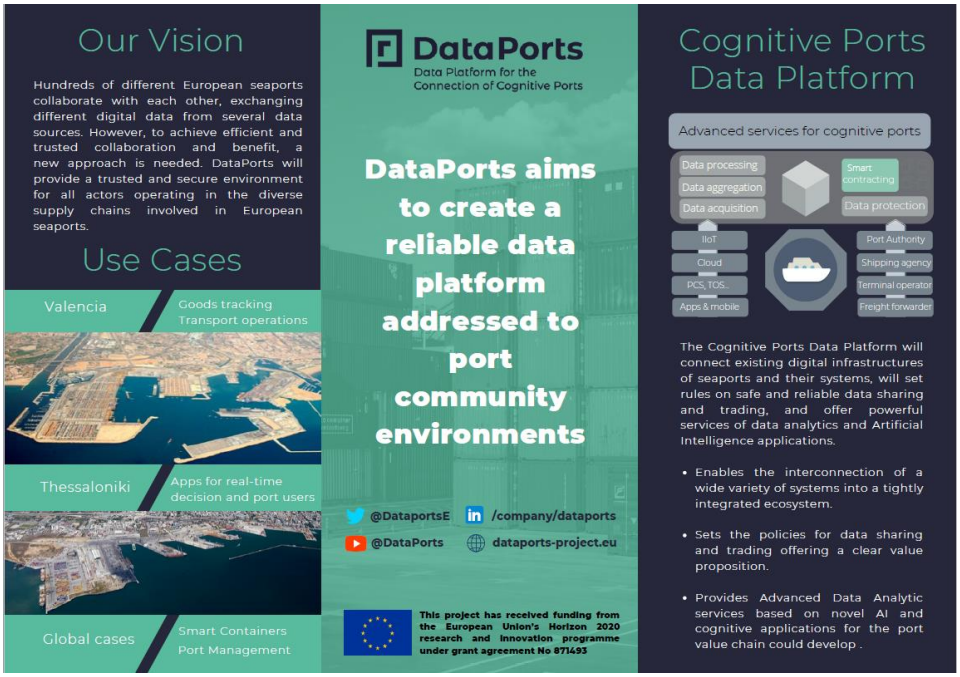


Figure 29 – DataPorts brochure (back side)

The first promotional poster is designed to provide an overview of the project at a first glance. In the next months, new versions of the supporting material will be offered, mainly aimed at explaining more specific and detailed aspects of the project.

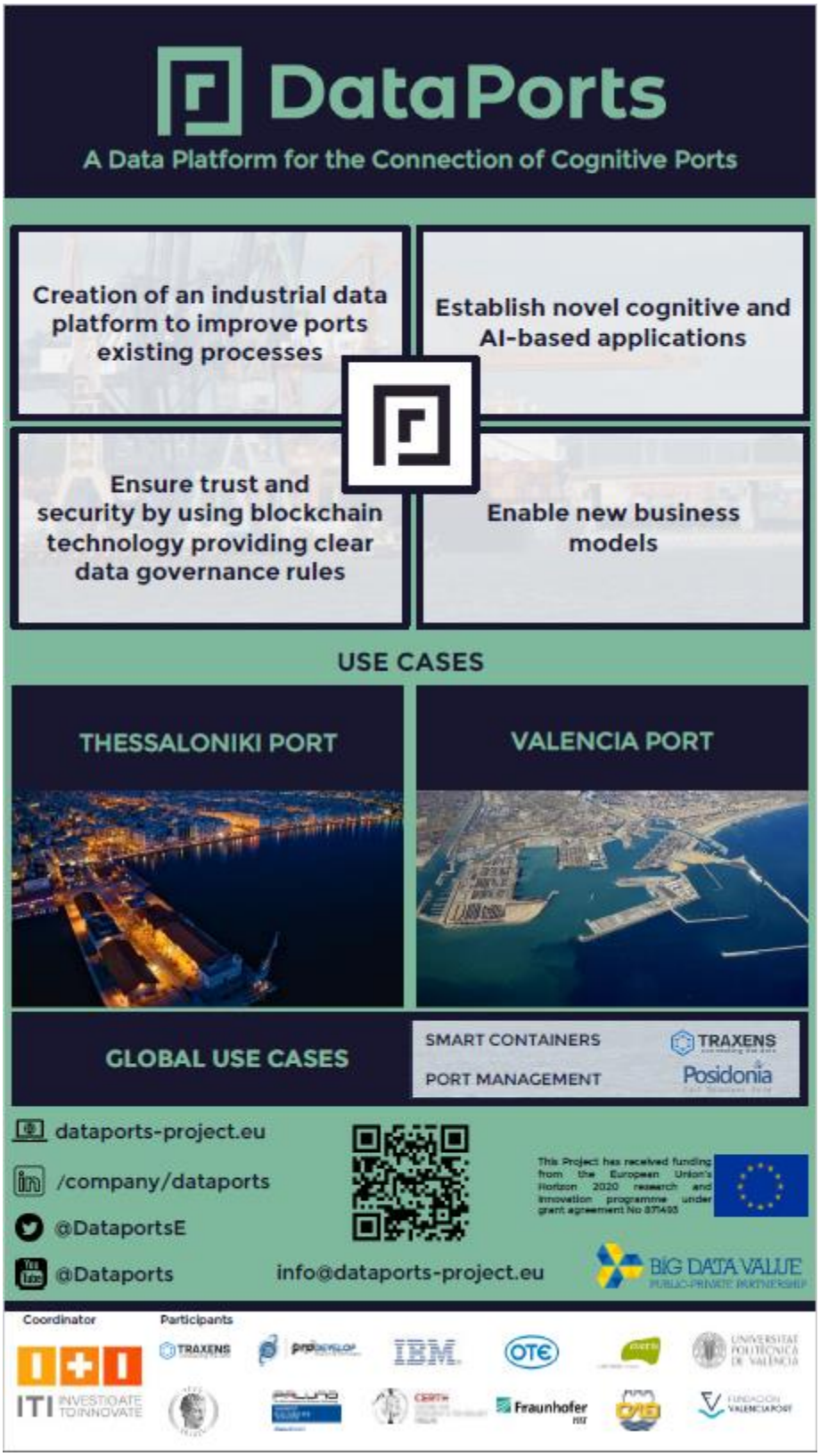


Figure 30 – DataPorts poster

Furthermore, in terms of the Projects presentation to the public and all the target audiences that are addressed, presentation templates were also created during the first six months of the project, concerning Word documents and PowerPoint presentations. In this way, the dissemination activities of DataPorts can

expose information about the project in a consolidated way.

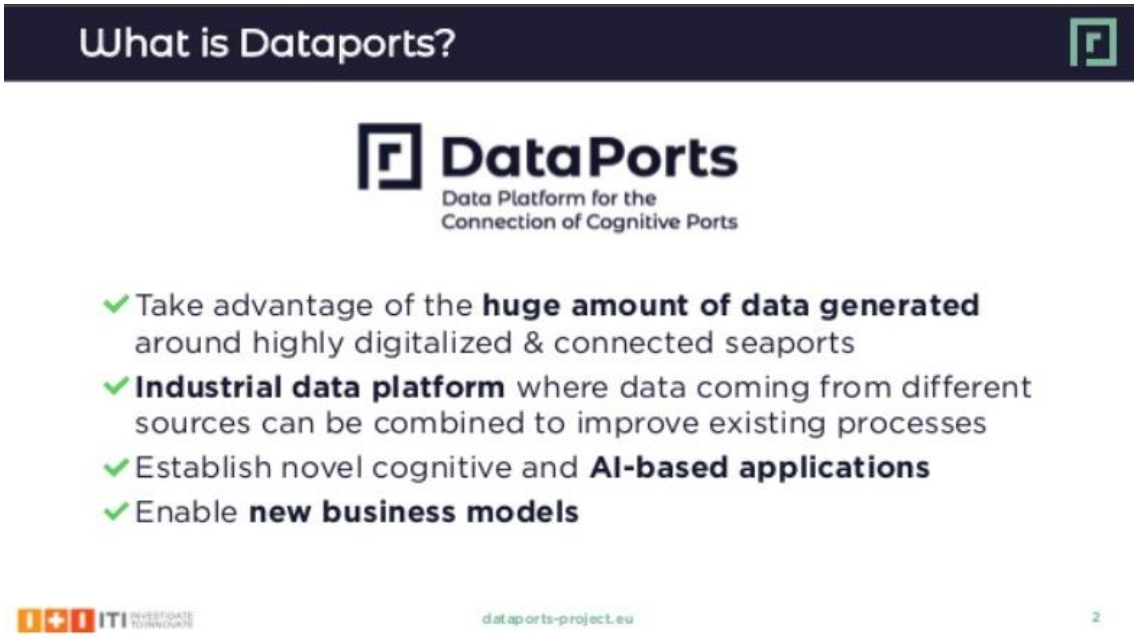


Figure 31 – Example of DataPorts presentation material

4.4 PRESENCE IN BLOGS AND PRESS

After the project's kick-off meeting, a press release template was circulated to the consortium. These press release guidelines apply in multiple languages including English and Spanish and offer the liberty to each partner to modify the press release template in order to add more information. According to this press release template, several appearances of the project have occurred in the press.

Figure 32 – DataPorts presence in the press with the involvement of VPF (January 2020)

Figure 33 – DataPorts presence in the press with the involvement of VPF (February 2020)

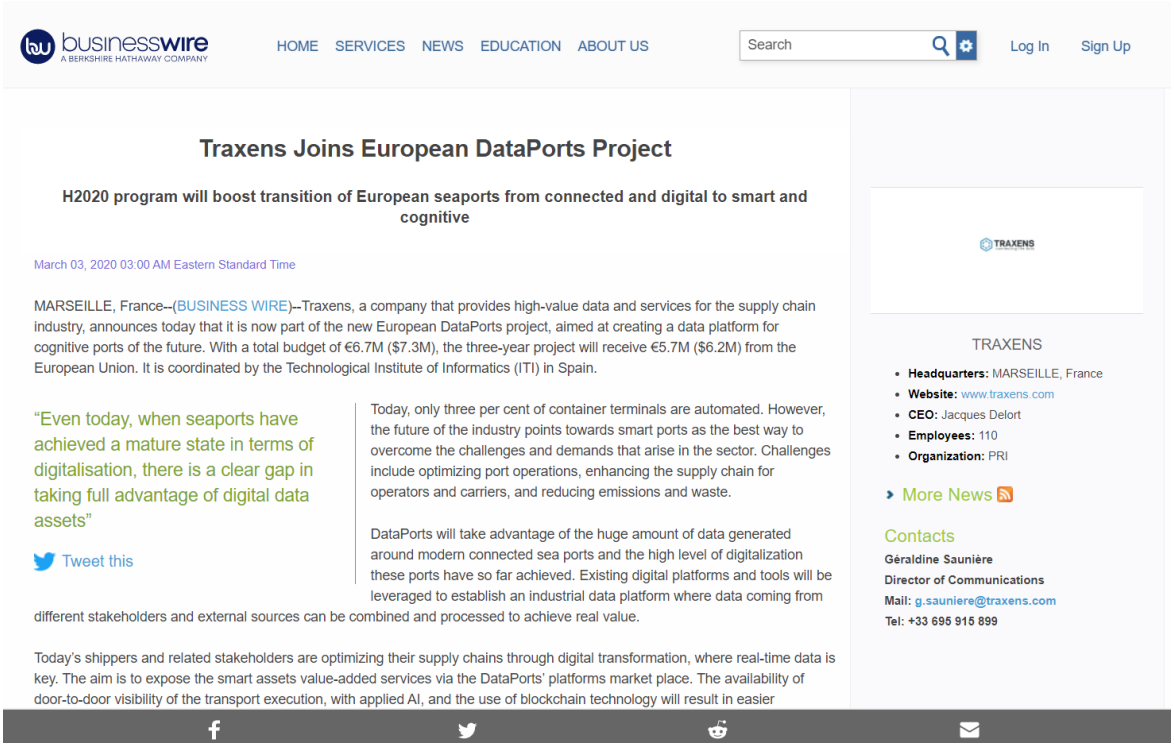


Figure 34 – DataPorts presence in the press with the involvement of TRX (March 2020)

In addition, DataPorts project has made appearances in local media with the involvement of different partners.

8 VALENCIA MARÍTIMA Jueves, 16 de enero de 2020

Data Ports facilitará la interconexión de datos en los puertos digitales

Gracias a esta iniciativa se avanzará hacia una interconexión de datos real de los puertos digitales involucrados en las rutas comerciales y cadenas de suministro, para poder obtener un valor global de los datos generados localmente

VM / VALENCIA

Esta semana ha tenido lugar la reunión de arranque del proyecto DataPorts (A Data Platform for the Cognitive Ports of the Future), cofinanciado por la Comisión europea a través del programa H2020, coordinado por el Instituto Tecnológico de Informática (ITI) y en el que participa la Fundación Valenciaport.

El objetivo principal de este proyecto es aprovechar la gran cantidad de datos generados en los puertos marítimos modernos gracias al alto nivel de digitalización. Para ello, se pretende crear un mercado integrando fuentes de datos de forma significativamente más fácil, rápida y confiable, gracias a la utilización de blockchain.

La solución de DataPorts permitirá conectar y compartir datos, lo que posibilitará el seguimiento de los puertos digitales involucrados en las rutas comerciales y cadenas de suministro, para poder obtener un valor global de los datos generados localmente.

Participantes en el proyecto *(Foto Fundación Valenciaport)*

nicas basadas en inteligencia artificial y en datos a nivel global, para proporcionar servicios cognitivos, obtener una mayor eficiencia de los procesos y reducir el impacto medioambiental.

En el caso concreto del de transitarios, un sistema de seguimiento de contenedores, y un PMS (Port Management System). Con estos datos, se crearán diversas aplicaciones para el seguimiento de mercancías y de contenedores y para el control del

El consorcio del proyecto está formado por el ITI (coordinador), la Fundación Valenciaport; Traxens; Prodevelop; IBM Israel; Hellenic Telecommunications Organization (OTE); Everis Spain; Universitat Politècnica de València (UPV); Institute of Communication and Computer Systems (ICCS); University of Duisburg-Essen; Centre for Research and Technology Hellas

Figure 35 – DataPorts presence in local media with the involvement of VPF (January 2020)

Figure 36 – DataPorts presence in local media with the involvement of EVR (July 2020)

Moreover, OTE posted information about DataPorts and the involvement of the company at the Deutsche Telekom Group Intranet site (YaM – Europe News Section), that is accessed only by the Group's employees worldwide. OTE also circulated information about the project at OTE Group's intranet site (Mynet-News

Section) that is accessed by approximately 16,000 employees, as well as at OTE Group's corporate website[2].

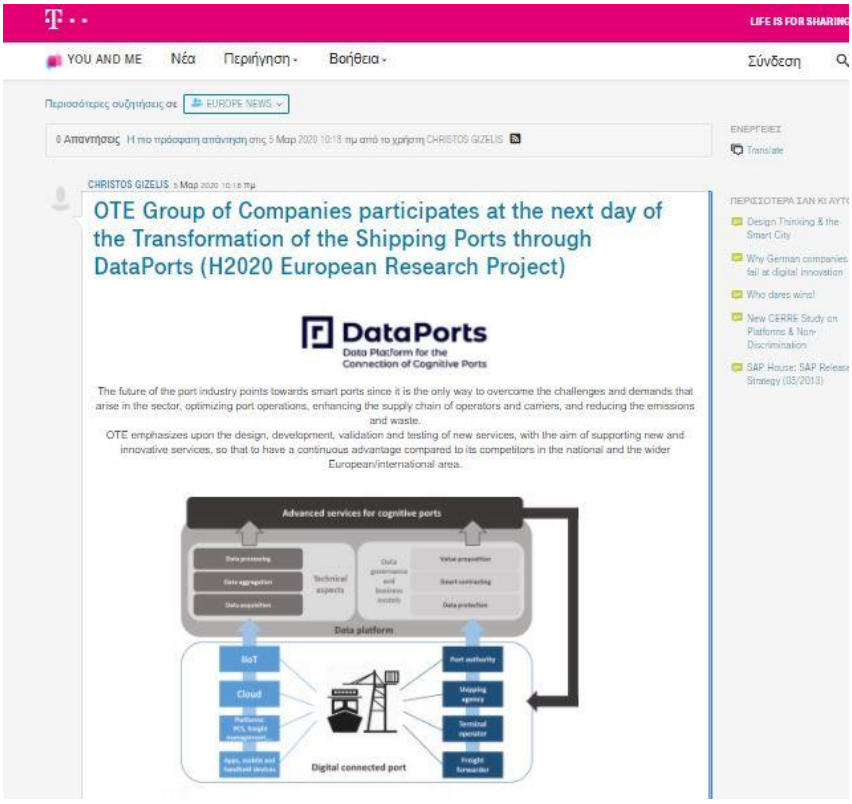


Figure 37 – DataPorts post at Deutsche Telekom Group Intranet site (YaM)

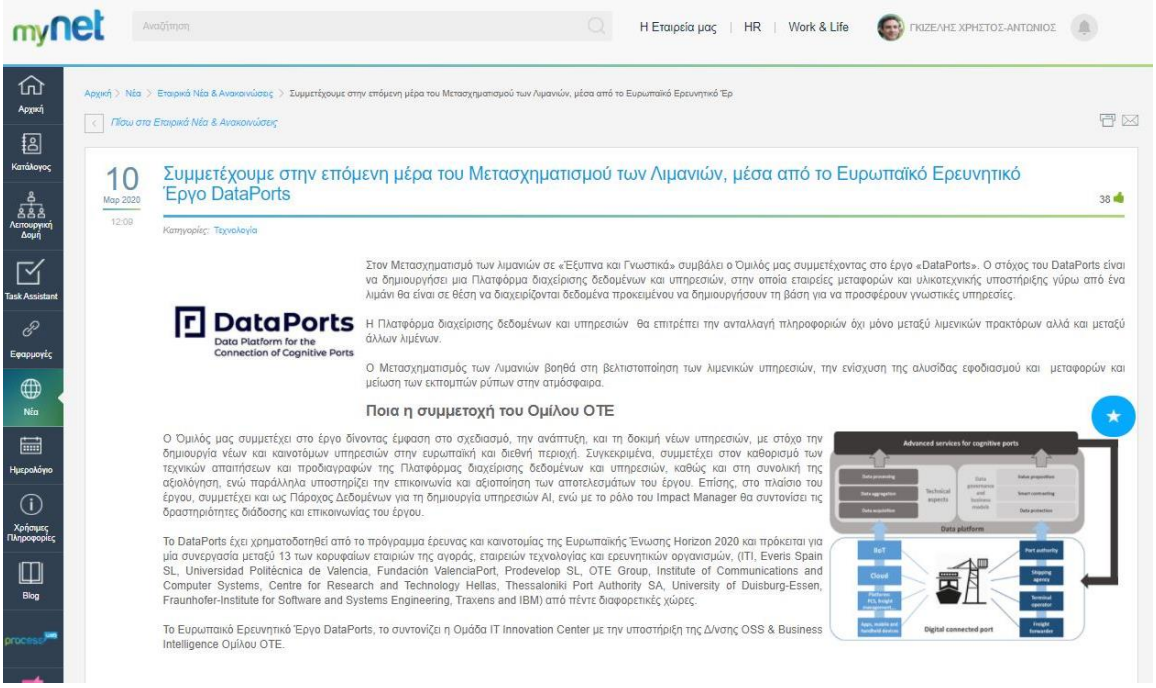


Figure 38 – DataPorts post at OTE Group Intranet site (Mynet)

[2] https://www.cosmote.gr/cs/otegroup/en/dataports.html

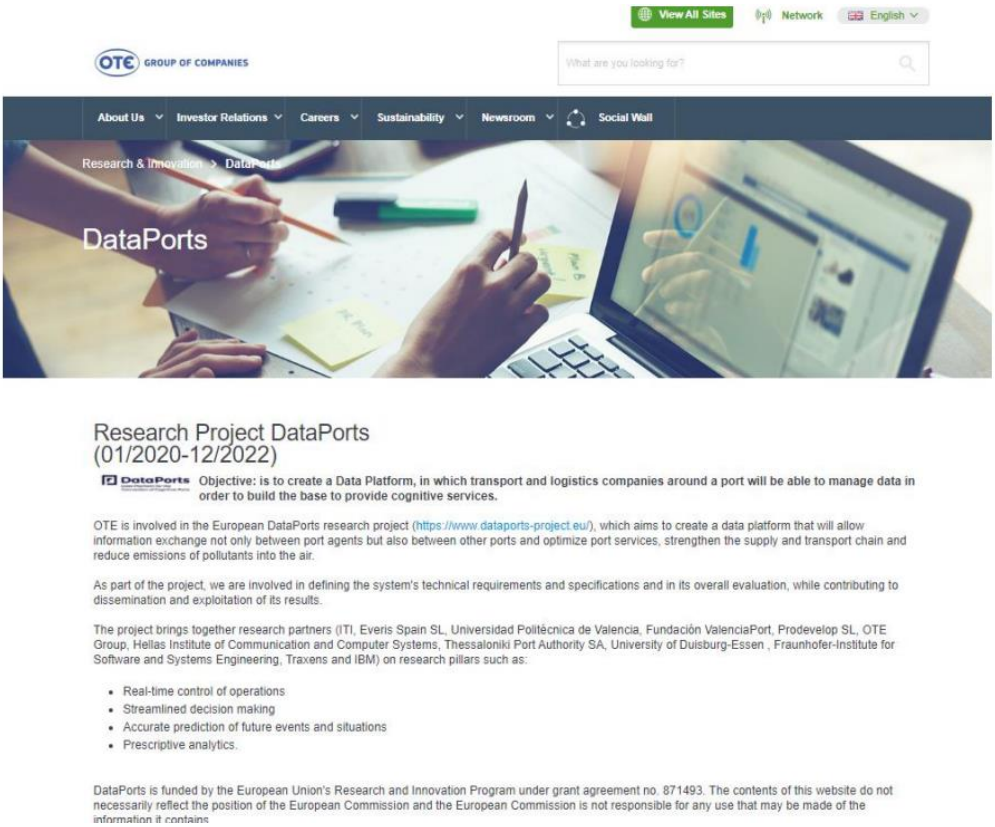


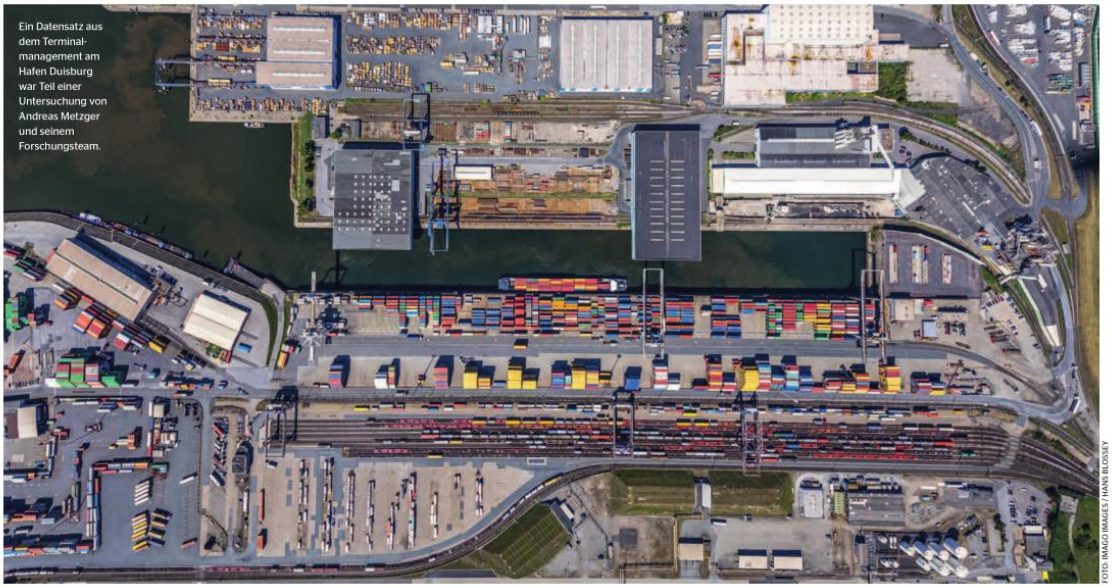
Figure 39 – DataPorts on OTE Group Corporate website

In addition, the process-based analytics component developed by UDE was featured in the special issue of a German transport trade journal (IVZ), as well as in a German electronics magazine.

12 Ausblick
TRANSPORT MANAGEMENT SYSTEME
DVZ N° 38 · MITTWOCH, 16. SEPTEMBER 2020

Wenn das System zum Autodidakt wird

Mit dem sogenannten Reinforcement Learning sollen Transportmanagementsysteme in einigen Jahren nicht nur automatisiert laufen, sondern stetig aus Prozessen lernen. So sollen diese immer weiter optimiert werden.



Ein Datensatz aus dem Terminal-management am Hafen Duisburg war Teil einer Untersuchung von Andreas Metzger und seinem Forschungsteam.

FOTO: IMAGO IMAGES / HANS BLOSSEY

Figure 40 – IVZ article about UDE's process-based analytics component

elektroniknet.de vom 13.07.2020

world of solutions Elektronik

Universität Duisburg-Essen: Entwicklung selbstadaptiver Systeme mit KI automatisieren

Beim Online Reinforcement Learning lernt KI-Software selbstständig, welche Anpassung des Code zu besseren Ergebnissen führt. Die Universität Duisburg-Essen hat dieses Verfahren zum »Policy-based Reinforcement Learning« verfeinert und kommt so ohne Feinjustierung der Explorationsrate aus.

Für selbstadaptive Software gibt es heute unzählige Anwendungsmöglichkeiten. Doch die Entwicklung der Systeme stellt Software-Ingenieure vor neue Herausforderungen. Wissenschaftler vom Softwaretechnik-Institut »paluno« an der Universität Duisburg-Essen (UDE) haben jetzt vielversprechende Ergebnisse mit neuartigen Verfahren der Künstlichen Intelligenz (KI) erzielt, die den Entwicklungsprozess selbstadaptiver Systeme automatisieren.

Die zunehmend schnelllebige, vernetzte Welt erfordert neue Ansätze in der Entwicklung von Software. Der Bedarf an selbstadaptiver Software wächst, also Software, die in der Lage ist, sich selbstständig an wechselnde Umgebungssituationen anzupassen. Beispiele sind schwankende Übertragungsbandbreiten in der Kommunikation, eine wechselnde Anzahl von Nutzern oder sich ändernde Benutzerpräferenzen.

Eine wesentliche Aufgabe bei der Entwicklung selbstadaptiver Software ist es vorzugeben, wann und wie eine Anpassung erfolgen soll. Das ist jedoch schwierig, weil die Ingenieure zum Zeitpunkt der Entwicklung meist nicht alle möglichen Umgebungssituationen der Software vorhersehen können. Dieser Herausforderung begegnet das paluno-Team mit Online Reinforcement Learning, einem Verfahren der Künstlichen Intelligenz.Lernverhalten für selbstadaptive Web-Anwendung (rot = Verlauf der Höhe des Feedbacks; blau und schwarz = Änderung der Umgebungssituationen; grün = Adaptionen).© Universität Duisburg-Essen

Lernverhalten für selbstadaptive Web-Anwendung (rot = Verlauf der Höhe des Feedbacks; blau und schwarz = Änderung der Umgebungssituationen; grün = Adaptionen).Neuartiger Lernalgorithmus: »Policy-based Reinforcement Learning«

Die Idee dahinter: Die Software lernt selbst, welche Anpassung in welcher Situation die beste ist, indem sie Feedback zur Laufzeit sammelt und auswertet. Gute Anpassungen führen zu positivem Feedback, schlechte

Figure 41 – Virtual article about the UDE's process-based analytics component

4.5 DIGITAL NEWSLETTER

DataPorts newsletter aims at content mailing campaigns that contain information about the project's news and achievements. The contact information captured from the contact section of the website is utilized in order to summarize the project's progress, publications and blog posts.

The first newsletter has been published in December 2020 (M12), and future newsletters are planned periodically every 6 months. The December newsletter will provide the following information: (i) an introduction containing the basic information of the project, (ii) a summary of the main activities and achievements of this year and (iii) the link to the main DataPorts social networks.

The basic information is composed by the project presentation, the consortium description, a link to the DataPorts informative file in CORDIS (Community Research and Development Information Service), a blog article about the collaboration with the BDVA, a link to the blog section of the website and a link to the project contact form. These contents allow the reader to get a general overview of the main aspects of the project.

The summary of the main activities and achievements of this year includes the main technical achievements, scientific publications, and events, as well as a summary of what is expected to achieve or present in the following months. The purpose is to offer the potential audience what has happened this year in the project.

Figure 42 – DataPorts newsletter

Apart from the main newsletter of the project OTE included in the OTE Group's monthly newsletter in March a description of DataPorts and the involvement of the company. The mailing list consisted of 16.000 employees.

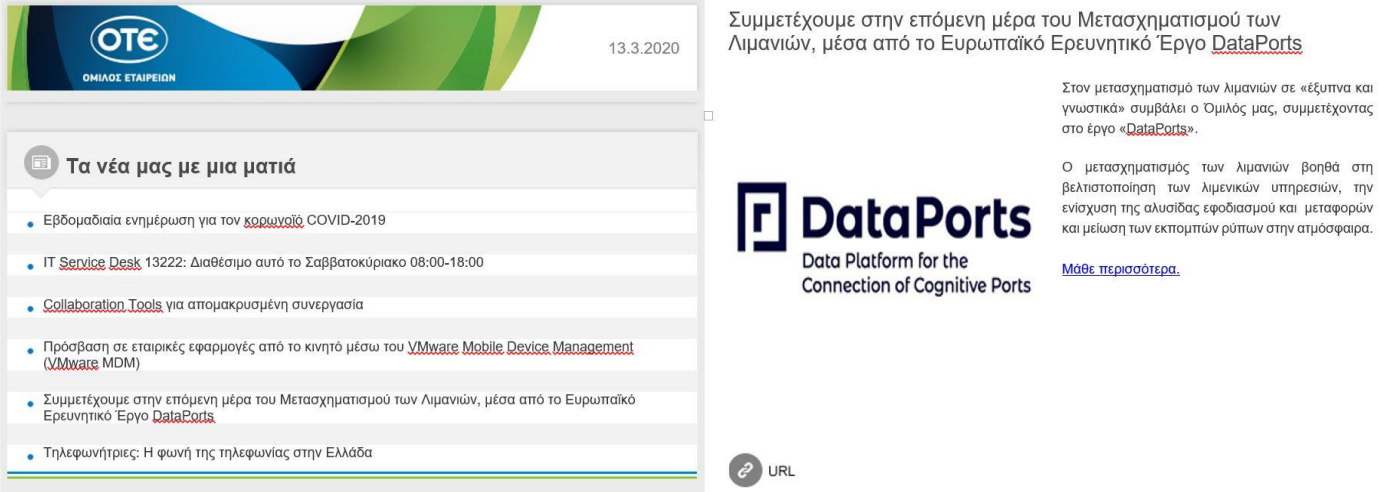


Figure 43 – Screenshots from OTE's newsletter

5 ON-SITE/VIRTUAL DISSEMINATION

On-site dissemination is considered one of the main ways to diffuse the content and achievements of DataPorts. The most important objectives that are destined to be achieved concern the exposure of DataPorts advances to the industrial community, the exhibition of DataPorts prototypes in industrial events and workshops, and the communication of the project's results to potentially interested stakeholders.

5.1 KPI FULFILMENT

Diffusion Activity	Description	Target value in Grant Agreement	From Whom	Achieved Milestones and Category Ranking	
				Current Value	Evaluation
Workshops, showcases	Final dissemination workshop with presentation of DataPorts results, open call for papers and industry session	Total of 2 over the project's lifetime	Scientific/industry community	4 workshops	Category 3: Overachievement
Industry events	"Marketing-oriented" presentations at industry events	At least 2 per year	Industry community	10 industry events	Category 3: Overachievement
On-site visits to field trial	Selected User and stakeholder groups, e.g., stakeholders, public authorities or solution developers	At least 2 during project lifetime	Industry community	-	Not applicable for the first year of the project.
International industrial events (exhibitions, conferences)	Number of attended events where DataPorts is represented	-	-	14 events	-
	Number of conferences where DataPorts is presented	-	-	3 conferences	-
	Number of DataPorts partners participating to events	-	-	7 partners	-
	Number of DataPorts partners attending booth	-	-	3 partners	-
	Number of events where promotional material was presented/distributed	-	-	11 events	-
	Number of leaflets distributed	-	-	-	Not applicable due to the Covid-19 outbreak
Showcases at the test sites	Number of showcases organized	-	-	-	Not applicable for the first year of the project.

Diffusion Activity	Description	Target value in Grant Agreement	From Whom	Achieved Milestones and Category Ranking	
				Current Value	Evaluation
	Number of participants to each organized showcase	-	-	-	Not applicable for the first year of the project.
Interviews	Number of interviews with target groups	-	-	4 interviews	-

Table 7 – On-site dissemination KPI fulfilment

During the first year of the project, there have been a lot of events (workshops, industry events, conferences etc.) that have promoted DataPorts to many audiences by presenting different aspects and milestones of the project that are tailored to each one of them. Nevertheless, many of the planned dissemination events have been cancelled, or have prohibited certain dissemination actions (i.e., leaflet and promotional material distribution) due to the Covid-19 pandemic.

5.2 COVID-19 ADAPTATIONS

The outbreak of the Covid-19 pandemic has altered the planned on-site dissemination activities, as many of them have been cancelled or have taken place virtually. Contrary to the traditional approach, this dissemination approach does not enable the same actions, nor does it raise awareness about DataPorts to the same length. Therefore, as can be noticed below, most communication activities are virtual and can be considered as the foundation to the tailoring of the next Dissemination Plan in the context of leveraging them accordingly.

5.3 WORKSHOPS

Workshops are utilized as a dissemination medium for DataPorts' results presentation, to initiate discussions among the project's consortium and the wide European research community.

5.3.1 Target Audiences Identified and Key Messages

Workshops are primarily addressed to the research community, industry and End Users, and aim at the initiation of discussions for potential collaborations, the diffusion of the project's milestones, and the communication of the DataPorts data sharing platform and its functionalities. Moreover, workshops are also addressed to Technology Providers, such as innovative SMEs, IoT Providers, and universities and non-profit entities that may act as End Users of the DataPorts Platform data and tools and subsequently act as enables for on-top innovative services.

5.3.2 Event Details

The workshops that were organized by the consortium of DataPorts or included participation of the project's partners are presented hereunder in chronological order.

- **Software practitioner conference OOP, February 2020:** The OOP is an annual conference for software architecture and is consisted of tracks of presentations and topics that are selected by an independent program committee after detailed examination. The topics of the conference vary from Artificial Intelligence to Web Apps including all the in-between areas of interest, such as Agility, Digital Transformation, Domain-Driven Design, Programming Languages and Software Development. OOP claims to offer the opportunity to deepen core competencies through the participation of renowned speakers that ensure deep content and a wide thematic spectrum.

The participants of the "Web Application Security: Current Developments"[3] session, that was organized by UKL and took place on the 3rd of February, acquired state-of-the-art practical knowledge on IT security, in terms of web applications as far as protective measures and best practices for the prevention of typical vulnerabilities are concerned. These guidelines were based on the current "OWASP Top 10 Security Vulnerabilities" of the "Open Web Application Security Project". The session also included practical exercises using open-source tools for security testing, and it was addressed to architects, developers, QA Managers, Project Managers, and product owners.

- **PortForward, SmartShip and DataPorts meeting, May 2020:** This workshop took place online in May in order to liaise the PortForward, SmartShip, and DataPorts projects. At the meeting, that lasted one hour, presentations were shown, and discussions of future collaborations and opportunities were discussed. The agenda of this workshop contained brief presentations including results, and objectives of these projects, an open discussion on ways to collaborate, as well as next steps. From the DataPorts partners, ITI was the one who presented the project.
- **Big Data Value workshops: Industrial Data Platforms, May 2020:** This webinar was organized on 6th – 8th May under the auspices of Big Data Value PPP. It served as the motive to start identifying synergies, as well as presenting the ways in which data platform projects address key data collection, sharing integration, and exploitation challenges. DataPorts was one of the projects presented. ITI and UDE performed an online presentation titled "A data platform for the cognitive ports of the future".

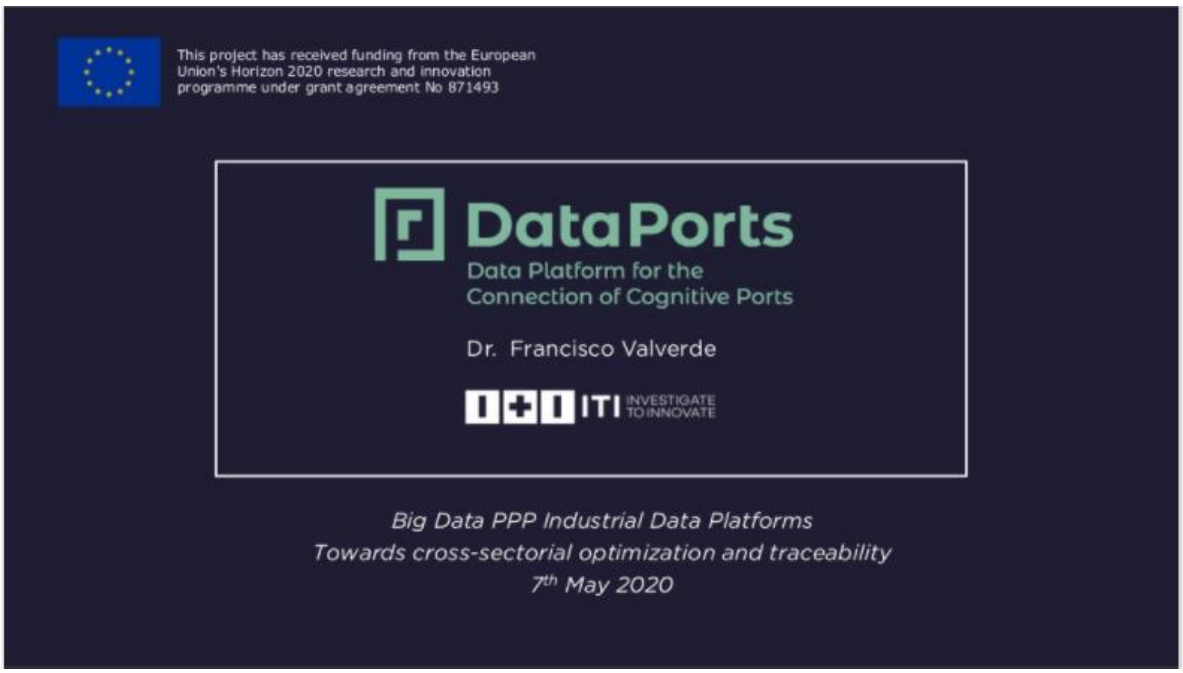


Figure 44 – DataPorts presentation in Big Data Value webinar

- **FoMSESS Workshop: Engineering Trustworthy Data-Intensive Systems with Software Models, October 2020:** The aim of the FoMSESS special group is to offer a discussion forum in the German-speaking area in the field of computer and information security that deals with basic research and the application of formal or mathematically precise techniques in software engineering. The special group is interested in security in the sense of both safety and security.

[3]https://www.oop-konferenz.de/oop2020/english/program/sessiondetails/action/detail/session/mo-9/title/sicherheit-von-webanwendungen-aktuelle-entwicklungen-ausgebucht.html%3Ftx_dmconferences_session%255BshowRooms%255D=0&cHash=7eed5c1be9115cabbf5da6b4b5b58e6d.html

The FoMSESS workshop took place in 12th and 13th October virtually, and UKL presented two topics in scope of the DataPorts project. The first topic named "Eliciting Privacy/fairness solution requirements and generating action plans" overviewed the bridging of the gap between legal data protection principles prescribed in the legal obligations and action plans that aim to concretely mitigate the privacy risks in an impact assessment process is a major challenge. The goal of this seminar thesis was to study privacy/fairness solution requirements and action plans for the purpose of privacy risk mitigation. Also, to provide an overview of the tools, methods to elicit and generate such requirements and action plans. The second topic named "Designing privacy-aware reference architecture" provided an overview and comparison between existing methods and models to design IoT reference architectures. To this end, one should study various reference architectures (such as HLA, AIOTI-WG3, OneM2M, IIRA, RAMI 4.0, IDSA). Furthermore, a comprehensive overview of methods and tools to support privacy goals in an architecture design was required.

5.4 INDUSTRY EVENTS

These events are primarily marketing oriented and aim at the diffusion and bilateral discussions between the project's consortium and potential stakeholders. They act as an introduction of the project to the industry and data market, and a first presentation of the project's data platform alongside its functionalities.

5.4.1 Target Audiences Identified and Key Messages

The content of industry events are different aspects of the project's achievements, breakthroughs, and innovative actions that are communicated to Data market actors, such as Data Owners, Providers, Consumers, Port Community Stakeholders, shipping and maritime companies, as well as transport and logistics value chains.

5.4.2 Event Details

The industry events that DataPorts participated in during the first year of the project's lifespan are depicted below in chronological order.

- **Meetings with key industry officers, January 2020:** In January, UKL organized two meetings with industry officers in order to introduce and disseminate the project of DataPorts. One of the meetings took place in Boppard, Germany and was addressed to the Chief Information Officer (CIO) of logistics software producer EPC. The second meeting with the CIO of the ship propulsion producer Schottel took place in Spay, Germany.
- **Meeting with Internal Managers, April 2020:** In April, Everis Industry Department organized a virtual meeting with the internal managers in order to present DataPorts to the different business areas and to explain EVR participation in the project. The scope of this meeting was to disseminate DataPorts project through the company.
- **Meeting with the Operations Department, May 2020:** Everis Operations Meeting is a quarterly presentation to discuss and communicate new projects to the entire sector and the current status of the department. Carlos Torres, Senior Consultant at Everis, presented DataPorts project during the meeting, which had the participation of all the members of the operations department from Spain and Italy. Over 50 people had the opportunity to understand the purpose of the project and the importance of data platforms for the ports of the future.
- **EUHubs4Data Kick Off meeting – IDSA session, September 2020:** The European federation of Data Driven Innovation Hubs serves as a connecting organization between data driven initiatives in Europe, federating solutions in a global common catalogue of data services and sharing data. In this way, this federation assists with the consolidation of a European reference for data driven innovation and experimentation.
  In scope of these Common European Data Spaces, DataPorts was presented in a session organize by IDSA as part of the EUHubs4Data Kick Off meeting by its Technical Manager, Francisco Valverde (ITI).

The presentation addressed DataPorts data governance and sovereignty approach and was titled "A data platform for the cognitive ports of the future". The audience that this presentation was addressed to, consisted of around 60 people belonging to the EUHubs4Data consortium.

- **Meeting with member of the German State Parliament, October 2020:** On the 13th October, UKL organized a meeting with a member of the German Parliament. The discussion took place in Koblenz, Germany, and the agenda included an introduction of the Faculty of the University of Koblenz Landau, the introduction of the projects in the field of E-Democracy, and the introduction of the projects in the field of Digitalization, Artificial Intelligence and e-Health.
- **BDVA Task Force 6.SG1 Data Technology Architectures, October 2020:** DataPorts coordinator, Santiago Cáceres (ITI), presented the project and its architecture online to the BDVA data technology architecture task force on 20th October. The presentation addressed solely the architecture of DataPorts project and was titled "A data platform for the cognitive ports of the future". The audience that this presentation was addressed to include around 16 persons that belong to BDVA task force.

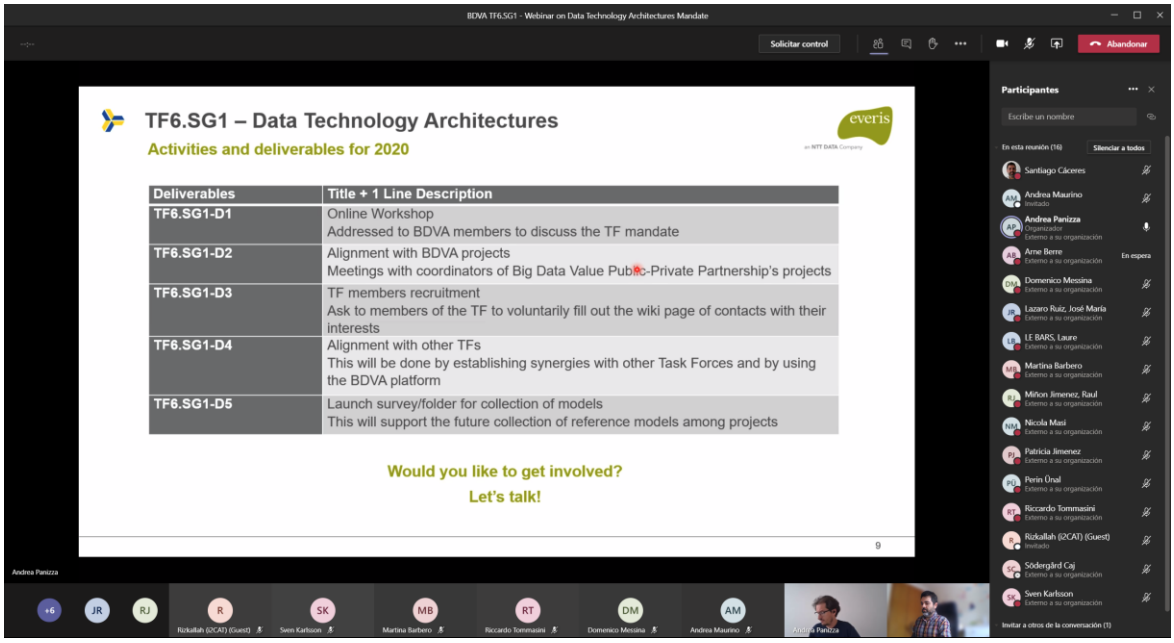


Figure 45 – DataPorts presentation at BDVA Task Force 6.SG1 Data Technology Architectures

- **European Big Data Value Forum – EBDVF 2020:** The European Big Data Value Forum (EBDVF) is the major event of the European Big Data and Data-Driven AI Research and Innovation community organized by the Big Data Value Association (BDVA) and the European Commission (DG CNECT). The central theme of the 2020 edition of the EBDVF was "Building a strong European Data and AI Ecosystem" and aimed at the connection between the German and European communities on AI and Data. Moreover, the event that was held in Berlin and online on 3rd – 5th November, addressed key topics for Europe such as the development of European Data Spaces, the importance of Technology Platforms and Trust, the opportunities for market uptake and the new challenges ahead for Data and AI within the society.

  DataPorts was sponsoring the EBDVF 2020, and Santiago Cáceres, project coordinator, presented the project online in a talk. DataPorts architecture, use cases and challenges were discussed, and feedback was positive from the audience that included more than 60 attendants. The partners that participated in this presentation was ITI, UPV and UDE, while the presentation included an introduction of the DataPorts project and was titled "A data platform for the cognitive ports of the future". DataPorts also held a virtual booth in scope of the project's dissemination.

- **Infocom World Conference, November 2020:** Infocom World Conference is annually organized by Smart Press in Athens and has been established as a renowned conference in the

telecommunications and IT sector in southeast Europe.

Figure 46 – DataPorts presentation cover at Infocom

This industry event addresses multiple markets and technology fields since ICT is interconnected with all technology markets. As a conference it is addressed primarily to professionals and executives from Telecommunications, IT and Media professional divisions. However, it also appeals to Data Analysts, Sales Executives, Security Officers, Service Providers, Consultants, Data Analysts, HR and PR professionals amongst others.

In November 2020 Infocom World Conference was scheduled to take place in Athens, Greece. However, due to the pandemic circumstances the event was held virtually with a three-day duration. DataPorts participated with a web presentation titled "Towards a smart port: A Digital Ecosystem Creation" and was represented by OTE and ICCS partners. This world conference aims at the presentation of the 5G and fibre enablers, the infrastructure, the digital transformation, and the creation of a digital ecosystem that stem from this newly introduced in the telecommunication industry.

- **BodyPass – The Future of 3D Human Body Data for Health and Industry, December 2020:** The BodyPass project[4], funded under the European Union's Horizon 2020 research and innovation programme and member of the BDV-PPP, presented its main results in its final event on the 3rd of December. This event was conducted in an online format and was addressed to companies, professionals, and institutions interested in the application of 3D human body data for health and product design. Moreover, the event gathered experts from different European countries and disciplines in order to tackle the most relevant topics related to 3D human body data and upcoming trends, including secure exchange of data, the use of Blockchain and the protection of personal data following the General Data Protection Regulation (GDPR). DataPorts was present in this event as an exhibitor and the project's virtual exhibition was visited by 51 attendees.

[4] https://www.bodypass.eu/

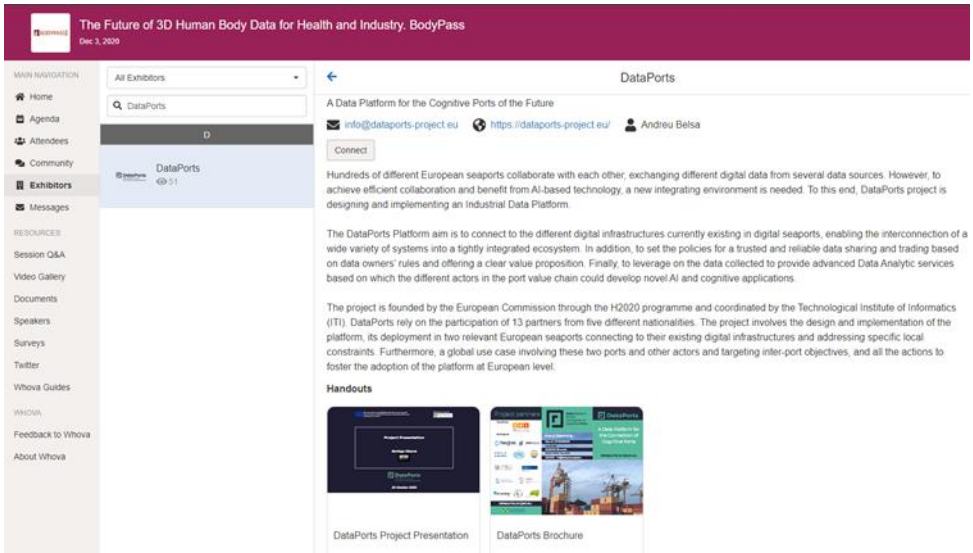


Figure 47 – DataPorts virtual exhibition

Figure 48 – DataPorts presence at the BodyPass project final event

- **BDV PPP Technical Committee Meeting #6:** ITI presented the initial lessons learned of DataPorts as part of a joint BDVA Activity Group and Technical Committee Meeting, taking place December 11, 2020. Over 100 participants joint this inline event, which also feature interventions from the European Commission as well as BDVA members.

5.5 ON-SITE VISITS

Since on-site visits are planned to be organized during or after the deployment of the pilots, it is needless to document this on-site dissemination category. However, it should be noted that it is planned to organize an on-site visit to the two ports that participate in DataPorts pilots, which are the Port of Valencia and the Port of Thessaloniki. This on-site event is going to be addressed to selected User and stakeholder groups, as well as Application Developers.

6 SCIENTIFIC DISSEMINATION

The scientific dissemination of the project is the most detrimental aspect of its diffusion as far as the scientific and academic community are concerned. The scientific dissemination includes not only publications of scientific papers in journals and conferences, but also open-source contributions to already established software tools and platforms, and educational initiatives, such as online courses, and webinars.

6.1 KPI Fulfilment

Diffusion Activity	Description	Target value in Grant Agreement	From Whom	Achieved Milestones and Category Ranking	
				Current Value	Evaluation
Publications	Key scientific publications at top tier conferences, associated workshops and magazine/journals	At least 2 per year; Total of 5 over project's lifetime	Scientific community	7 publications in conferences and journals	Category 3: Overachievement
Open-source contributions	Contributions to open-source projects (e.g., FIWARE, ECLIPSE, Bridge.IoT)	At least 1 per year	Scientific and Industry community	1 contribution	Category 2: Good progress
Education	E-learning platform and training sessions will be developed to allow the stakeholders of all country partners to let to know the conclusions, results and products, as an open access platform. World-wide dissemination tours and industry-organized seminars at universities	Two online seminars per year. At least 1 MOOC. At least 1 seminar per year.	Scientific and Industry community	1 course	Category 1: Needs further attention
Scientific papers publication	Number of submitted papers	-	-	1 book chapter	-
	Number of papers published in international referenced journal	-	-	2 journal articles	-
	Number of papers in international conferences	-	-	4 conference papers	-
	Number of DataPorts authors contributing to scientific papers	-	-	5 partners	-
	Average number of different partners authoring each paper	-	-	1.14 partners	-
	Total number of reads of scientific publications in ResearchGate	-	-	412 reads	-
	Number of participated scientific events	-	-	4 conferences	-

Diffusion Activity	Description	Target value in Grant Agreement	From Whom	Achieved Milestones and Category Ranking	
				Current Value	Evaluation
Scientific Dissemination events	Number of posters at scientific events	-	-	-	Not applicable due to the Covid-19 outbreak
Organization of scientific actions	Organization of webinars	-	-	-	-
	Organization of technical workshops at University	-	-	1 seminar	-
Open-source contribution	Number of project's outcomes available as open source	-	-	-	Not applicable during the first year of the project
	Number of contributions to open-source initiatives	-	-	-	Not applicable during the first year of the project

Table 8 – Scientific dissemination KPI fulfilment

Regarding the target values of the KPI's that are presented in the Grant Agreement, the publications and open-source contributions of the project are in good progress. Besides those target values, additional quantitative indicators are also reported concerning the scientific dissemination, in order to display more accurate results. However, the educational dissemination of the project seems to be needing further attention and additional dissemination actions mainly from the academic partners. Nevertheless, virtual presentations of DataPorts include a lot of information about the scientific milestones of the project, and can be accessed and leveraged by the academic community.

6.2 PUBLICATIONS

The scientific results of DataPorts need to be published within the scientific community to generate knowledge from the innovation actions that take place within the lifespan of the project. The primary targets are Q1 scientific journals (the top 25% journals in the field), with occasional publications in Q2 journals (the top 50%), where members of the DataPorts consortium can publish the results of their findings. In addition, distinguished scientific and technical conferences in all the addressed fields are identified as media for channeling the knowledge generated from the project's advances.

6.2.1 Target Audiences Identified and Key Messages

The DataPorts project addresses many topics form different technological areas, converging within the port ecosystem. Therefore, scientific and research communities may be highly interested in the results of the project, whose dissemination strategy in research and in scientific communities is quite similar in the different research domains. The identified research communities that are of interest for DataPorts are approached through the publication of research papers that stem from the project's results and state of the art analysis in specialized journals and conferences. Moreover, the publication of the results of the research activity of DataPorts enables the academic community to utilize and further develop the research in the

respective area. The key messages that are communicated to these communities and audiences depend on the technical outcomes, achievements, and milestones of the project. Therefore, each reporting period addresses different key messages that occur as a result of the respective stage that the project finds itself at.

6.2.2 Scientific Papers

Scientific papers refer to publications in established and well-known journals and presented at conferences where a plethora of academics and researchers participate.

- **Towards a smart port: the role of the telecom industry:** The paper titled "**Towards a smart port: the role of the telecom industry "**[5] is co-authored by members of the OTE and ICCS partners. In specific, Christos-Antonios Gizelis, Theodoros Mavroeidakos, Achilleas Marinakis, Antonis Litke, and Vrettos Moulos submitted this scientific paper to 16th International Conference on Artificial Intelligence Applications and Innovations – AIAI, Greece, June 2020. The paper was published on 29th May in IFIP Advances in Information and Communication Technology book series (IFIPAICT, volume 585) by Springer.

  The scope of this paper is to analyse and scrutinize the opportunities and challenges that are risen for Telecommunications/Information and Communication Technology (ICT) Providers at ports. These opportunities are the stepping stone towards the transformation of ports for the future. Furthermore, the initial DataPorts architecture is being presented, along with a high-level description of the project's functional components.

- **Online Reinforcement Learning for Self-adaptive Information Systems:** "**Online Reinforcement Learning for Self-adaptive Information Systems"**[6] is co-authored by Alexander Palm, Andreas Metzger, and Klaus Pohl and was published on 3rd June 2020. The paper was submitted to the 32nd International Conference, CAiSE 2020, Grenoble, France, in June 2020 and is published as a conference proceeding in the "Advanced Information Systems Engineering", which is an A-level ranked computer science conference.

  This paper presents the technology underlying the "Prescriptive Process Monitoring" component of the DataPorts Process-based Analytics module. See the following paper.

- **Triggering Proactive Business Process Adaptations via Online Reinforcement Learning:** Andreas Metzger, Tristan Kley, and Alexander Palm published the book chapter "**Triggering Proactive Business Process Adaptations via Online Reinforcement Learning"**[7] as a conference paper of the Business Process Management book that was published by Springer. This book constitutes the proceedings of the 18th International Conference on Business Process Management, BPM 2020, held in Seville, Spain, in September, which is an A-level ranked computer science conference.

  This paper presents the "Prescriptive Process Monitoring" component of the DataPorts Process-based Analytics module. This component integrates policy based RL into a well-known self-adaptive system reference model. This component thereby facilitates online RL for self-adaptive information systems without having to (i) manually quantize environment states and (ii) manually fine-tune the exploration rate. The feasibility and applicability are evaluated using a predictive process monitoring system.

- **"Ensemble Deep Learning for Proactive Terminal Process Management at duisport"**: This is a book chapter co-authored by A. Metzger, J. Franke, T. Jansen that is going to be included in the Business Process Management Cases – Volume 2, J. vom Brocke, J. Mendling, and M. Rosemann, Eds. Springer,

[5] https://link.springer.com/chapter/10.1007/978-3-030-49190-1_12

[6] https://link.springer.com/chapter/10.1007/978-3-030-49435-3_11

[7] https://link.springer.com/chapter/10.1007/978-3-030-58666-9_16

to be published in 2021., representing the selected best papers of the BPM 2019 conference industry track.

This book chapter presents the “Ensemble Predictive Process Monitoring “component of the DataPorts Process-based Analytics module (previously prototyped in the TransformingTransport project). Advanced data analytics were employed to provide decision support for terminal operators and facilitate proactive management of the terminal’s processes. Using ensembles of deep learning models, the component predicts delays in the execution of a running process and provides operators with decision support regarding whether to intervene by adapting the process. Lessons learned clearly indicate the need for a data sharing platform, such as DataPorts.

- **A Scalable and Semantic Data as a Service Marketplace for Enhancing Cloud-Based Applications:** DataPorts submitted in March 2020 the journal article with title **“A Scalable and Semantic Data as a Service Marketplace for Enhancing Cloud-Based Applications”**[8] to the Future Internet journal of the Multidisciplinary Digital Publishing Institute (MDPI). The authors of the article belong to ICCS and are Evangelos Psomakelis, Anastasios Nikolakopoulos, Achilleas Marinakis, Alexandros Psychas, Vrettos Moulos, Theodora Varvarigou and Andreas Christou. The article was revised and accepted in April 2020 and published in the Special Issue Network Cost Reduction in Cloud/Fog Computing Environments. More significantly, amongst 17 published papers in this issue, this article was selected to be placed in the cover of that issue (ISSN 1999-5903). *Future Internet* is ranked Q2 (133/307) in the category "Computer Networks and Communications" according to Elsevier's Scopus citation database[9].

  This journal article analyses and implements the Virtual Data Container (VDC) concept that aims to simplify the data management in heterogeneous, complex, and distributed infrastructure. Following the Data as a Service paradigm (DaaS), VDC –a core component of DataPorts architecture- provides an abstraction layer that takes care of retrieving, processing, and delivering data with the proper quality level, while in parallel putting special emphasis on performance, security, privacy, and data protection aspects. Similarly, to the main goal of the DataPorts project in terms of improving data management, the article presents a DaaS platform that attempts to deal with critical issues such as scalability and semantic interoperability.

[8] https://www.mdpi.com/1999-5903/12/5/77

[9] https://www.scopus.com/sourceid/21100409311

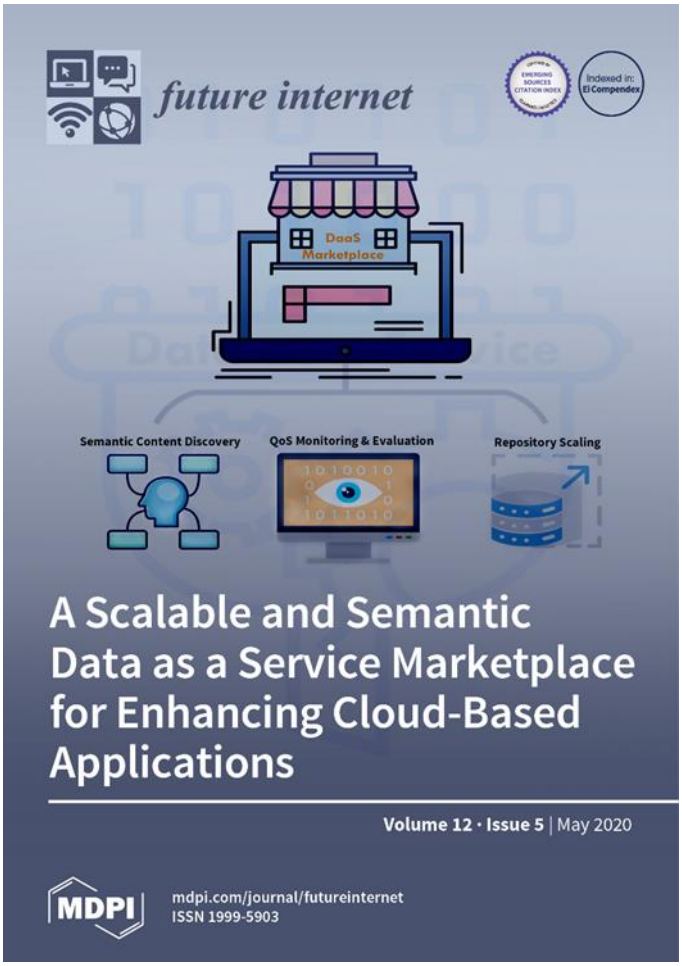


Figure 49 – MDPI Future Internet Volume 12 / Issue 5 cover

- **Framework and Methodology for Establishing Port-City Policies Based on Real-Time Composite Indicators and IoT, A Practical Use-Case:** DataPorts in collaboration with PIXEL-ports project[10] submitted in July 2020 the journal article with title "**Framework and Methodology for Establishing Port-City Policies Based on Real-Time Composite Indicators and IoT: A Practical Use-Case**"[11]. The authors of the article belong to UPV and are Ignacio Lacalle, Andreu Belsa, Rafael Vaño and Carlos E. Palau. The article was revised and accepted in July 2020 and published in the Special Issue IoT-Enabled Smart Cities[12]. This is a special issue of Sensors (ISSN 1424-8220)[13] journal. This special issue belongs to the section "Sensor Networks". Sensors is ranked Q1 (15/64) in the category “Instruments & Instrumentation”, Q2 (22/86) in the category “Chemistry, Analytical” and Q2 (77/266) in the category “Engineering, Electrical & Electronic” according to the JCR[14] category rank.

  This paper proposes an IoT-based software framework, accompanied with a methodology for defining, calculating, and predicting composite indicators that represent real-world phenomena in the context of a Smart Port-City. The experiment consists of deploying a composite index for monitoring traffic congestion at the port-city interface in Thessaloniki (Greece). This research

[10] https://pixel-ports.eu/

[11] https://www.mdpi.com/1424-8220/20/15/4131

[12] https://www.mdpi.com/journal/sensors/special_issues/IoT_Enabled_Smart_Cities

[13] https://www.mdpi.com/journal/sensors

[14] https://jcr.clarivate.com/

involves Thessaloniki port, responsible of one of the DataPorts use cases. The paper is focused on the interoperability of Thessaloniki city and port in freight traffic. The aim is to optimize the traffic between the city and the port area. In addition to reduce pollution, queues, energy consumption etc. Finally act as a single point of reference for data exploitation for the benefit of the Port Authority, the passengers and the local community. The proposed solution will help the authorities to have a better planning and resource optimization, while the passengers will have a more comfortable and smooth transfer from their home until their embarkation. From a technical point of view, semantic interoperability is implemented through the use of Fiware Data models, NGSI agents, Orion Context Broker and Fiware components. These technologies are a key element of the Data Access and Semantic Interoperability components of DataPorts.

- **Cost Fairness for Blockchain-Based Two-Party Exchange Protocols**: Matthias Lohr, Benjamin Schlosser, Jan Jürjens, and Steffen Staab submitted to the 2020 IEEE International Conference on Blockchain (Blockchain) the paper titled **"Cost Fairness for Blockchain-Based Two-Party Exchange Protocol"**[15]. This conference proceeding was published to IEEE Xplore on 11 December 2020.

  The DataPorts architecture supports the exchange of data and involves the use of Blockchain. The paper presents an approach for performing a Blockchain based data exchange supporting fairness requirements.

The statistics for each of the aforementioned scientific publications can be found in Table 9. However, metrics regarding papers "Ensemble Deep Learning for Proactive Terminal Process Management at duisport" and "Cost Fairness for Blockchain-Based Two-Party Exchange Protocol" are not included hereunder. This owes to the fact that the former is going to be published in 2021, and the latter will have available metrics in January 2021, since published in December 2020 in IEEE Xplore. The below metrics can be found in the official site of each publisher.

	Abstract Views (DOI)	Full-Text Views (DOI)	Downloads (DOI)
Towards a Smart Port: The Role of the Telecom Industry	-	-	1.2k
Online Reinforcement Learning for Self-adaptive Information Systems	-	-	1.4k
Triggering Proactive Business Process Adaptations via Online Reinforcement Learning	-	-	1k
A Scalable and Semantic Data as a Service Marketplace for Enhancing Cloud-Based Applications	2.860	1.421	-
Framework and Methodology for Establishing Port-City Policies Based on Real-Time Composite Indicators and IoT: A Practical Use-Case	854	493	-

Table 9 – Scientific publications' metrics

6.3 OPEN-SOURCE CONTRIBUTIONS

DataPorts aims at being a reference on the data-sharing and data-market fields, as well as being an enabler platform for Application Developers to build upon. To achieve the above, DataPorts will be to collaborate

[15] https://ieeexplore.ieee.org/document/9284801

and position properly in different trending open-source initiatives. At this stage of the project there are no visible results in this section, mainly, because the Software material will begin to be available in the M18.

However, the expected envision about how to contribute to open-source projects, such in the case of FIWARE, has been published. For example, the motivation behind the collaboration with the Fiware Ecosystem has been described in a DataPorts Blog entry titled "Open-Source contributions: Fiware Ecosystem"[16]. In addition, the first technical steps of the contribution with Fiware have been described and are available in the article previously presented titled “Framework and Methodology for Establishing Port-City vPolicies Based on Real-Time Composite Indicators and IoT: A Practical Use-Case".

6.4 EDUCATION

As a part of the exploitation and dissemination plan of the academic and research partners, DataPorts will funnel the innovative outcomes of the project to transfer the knowledge into academic realities. It will provide opportunities for the training of new graduate and PhD students. Although the project is in an early stage, the first steps have been taken in this regard.

Prof Carlos E. Palau has given on December 7th a seminar about DataPorts in the “Master's Degree in Cybersecurity and Cyberintelligence” within the topic Security of Things at the Universitat Politecnica de Valencia.

Figure 50 – Prof. Carlos E. Palau explaining DataPorts in an educational seminar

During this presentation, an overview of DataPorts, a description of the platform and its components, as well as some details about how the challenges of secure information exchange will be faced in the project were offered.

The future objectives of these university seminars are to enable the combination of knowledge from the project innovative areas like IDSA, Blockchain or AI, through PhD and MSc theses and more courses.

In addition, UDE has planned a dedicated Master course on explainable AI for predictive process monitoring, where the DataPorts component on “Explainable Predictive Process Monitoring” will play a prominent role.

[16] https://dataports-project.eu/open-source-contributions-fiware-ecosystem/

7 CONCLUSIONS AND NEXT STEPS

The main indication for the effectiveness of the dissemination and communication plan of DataPorts are the KPIs that are described in the Grant Agreement, in combination with the additional quantitative indicators that were introduced in the D6.1 deliverable [1], which describes the dissemination plan of the project with extensive detail. In the present document took place the reporting and evaluation of the dissemination activities that were planned and realized during the first year of DataPorts. This deliverable acts as a guide to calibrate the diffusion plan of the project for the next stages of its lifespan by suggesting next steps and correction measures that should be examined in the D6.5 Dissemination and communication plan (M18). The latter is achieved by the presentation of a consolidated documentation of all the diffusion activities and their effectiveness during the first twelve months of DataPorts.

Overall, during the first year of DataPorts lifespan, the project's identity, goals, and vision have been created and established. Furthermore, all the identified dissemination channels were evaluated and prioritized in terms of "what", to "whom", and "why" to communicate the different outcomes of the project. To this end, by approaching each dissemination aspect, the website of the project, which serves as the main dissemination channel, alongside several social media platforms exhibited great progress by overachieving the target values of the KPI's. As far as the dissemination package is concerned, great content has been created to establish and diffuse the identity of the project and its core values. All target values have been accomplished. On-site dissemination has encountered the most hurdles due to the Covid-19 pandemic. Nevertheless, the target values that were currently feasible to be accomplished were satisfied and often overachieved.

Concerning the scientific dissemination of the project, even though there have been many scientific publications, there is also a lack of educational courses, MOOC's, and online seminars that would promote the takeaways from the process of designing and implementing DataPorts project. This setback is balanced by the plethora of virtual presentations of DataPorts and its so far advancements that are available online and can be accessed by the academic community, since during 2020 the project was at a very early stage to offer specific and effective courses, webinars, and MOOCs. Nevertheless, during M18 when the first demonstrating deliverables of the platform are going to be created, emphasis will be placed upon creating educational material. Moreover, the dedicated Master course from UDE that will introduce a DataPorts component to the academia is going to affect positively the education KPI's in the next dissemination period. On a different level, the project's presence in all social media platforms has been adapted according to the nature of each platform's content and the corresponding target audience. That is, most of the selected social media platforms have been established as prime fora for the diffusion activities that are important during this dissemination period, while a few have resulted in acquiring a subsidiary role in the dissemination of the project.

Correction measures towards the enhancement of the dissemination metrics are considered three-fold. The first dissemination area that could adapt to the metrics reported in the present document concerns digital channels. The role and significance of each one of the social media platforms should be re-evaluated in terms of their contribution to the key messages that need to be communicated, and all the selected target audiences. In addition, indicative actions are considered, such as higher frequency of posts during events, meetings, and conferences, more technical and project focused posts, and special series of posts focused exclusively on project information and achievements. The second and third dissemination areas that exhibit room for improvement are education and open-source contributions. The main suggestion is the creation and establishment of a calendar that is going to be accessible by all partners, and will document the progress of the DataPorts Platform development leading up to the milestone of its first version in M18. This calendar should include all technological and scientific advancements to track closely the route of the project. In this way, it might be easier to produce educational content and organize concrete activities that stem from and are aligned with the achievements of DataPorts. For instance, educational webinars could be realized as an adaptation of the technological techniques that were leveraged for the platform into scientific material that can be published within the academic community, such as Blockchain, Big Data, AI webinars. Moreover, the

progress of the DataPorts Platform development and its documentation in the calendar could contribute to the identification of open-source contributions as additional outcomes from each designed and realized component.

In conclusion, all dissemination media are constantly evolving in terms of content. For instance, DataPorts website is regularly updated with new material, revisions of the already present resources, blogposts, and information about the project's progress. Furthermore, the consortium keeps searching for new publication opportunities, and identified events on scientific and industrial level that the project could participate in. An example is the existing collaboration with BDVA that supports an exchange of information, achievements, and expertise. Lastly, in the current reality of uncertainty, the planning of certain dissemination activities, such as virtual events versus on-site, and the dissemination package (digital material versus paper printing) will have to be constantly re-evaluated during next year. Ever-changing corrective actions due to Covid-19 affect the effort estimation and resources allocation of the different dissemination activities and the dissemination plan in general.

8 REFERENCES AND ACRONYMS

8.1 REFERENCES

[1] DataPorts Consortium, “D6.1 - Dissemination and Communication plan,” June 2020.

8.2 ACRONYMS

Acronyms List	
AI	Artificial Intelligence
AIOTI	Alliance for Internet of Things Innovation
BDVA	Big Data Value Association
BDV PPP	Big Data Value Public-Private Partnership
CIO	Chief Information Officer
DaaS	Data as a Service
DoA	Description of Action
DOI	Digital Object Identifier
EBDVF	European Big Data Value Forum
EU	European Union
GA	Grant Agreement
HLA	High Level Architecture
HR	Human Resources
ICT	Information and Communication Technology
IDSA	International Data Spaces Association
IEEE	Institute of Electrical and Electronics Engineers
IIRA	Industrial Internet Reference Architecture
IoT	Internet of Things
ISSN	International Standard Serial Number
IT	Information Technology
JCR	Journal Citations Reports
KPI	Key Performance Indicator
MOOC	Massive Open Online Courses
MSc	Master of Science
PhD	Doctor of Philosophy
PR	Public Relations
QA	Quality Assurance
RAMI	Reference Architecture Model Industrie

Acronyms List	
RL	Reinforcement Learning
RT	Reply Tweets
SME	Small Medium Enterprise
VDC	Virtual Data Container

Table 10 – Acronyms

9 ANNEX 1: GLOBAL DISSEMINATION MATRIX

The status of the Dissemination Matrix, at the month of the submission of this deliverable (M12), is the following:

	Data sharing / Data Markets			Data Analytics/AI			Ports business			Data security / Smart Contracts		
	id	Description	Partners	id	Description	Partners	id	Description	Partners	id	Description	Partners
SCIENTIFIC DISSEMINATION EVENTS	#S.D.1	Article "A Scalable and Semantic Data as a Service Marketplace for Enhancing Cloud-Based Applications" in *Future Internet* journal	ICCS	#S.DA.1	Conference proceeding "Online Reinforcement Learning for Self-adaptive Information Systems" presented at the *32nd International Conference, CAiSE 2020*	UDE	#S.P.1	Article "Framework and Methodology for Establishing Port-City Policies Based on Real-Time Composite Indicators and IoT, A Practical Use-Case" in *Sensors* journal	UPV	#S.DS.1	Seminar for the Master's program in Cybersecurity and Cyberintelligence at the Polytechnic University of Valencia	UPV
				#S.DA.2	Conference proceeding "Triggering Proactive Business Process Adaptations via Online Reinforcement Learning" presented at the *18th International Conference on Business Process Management, BPM 2020*	UDE	#S.P.2	Conference proceeding "Towards a smart port: the role of the telecom industry" presented at the*16th International Conference on Artificial Intelligence Applications and Innovations – AIAI 2020*	OTE, ICCS	#S.DS.2	D2.3 - Blockchain design specification deliverable	EVR, IBM, CERTH, VPF, ThPA, ITI
				#S.DA.3	Book chapter "Ensemble Deep Learning for Proactive Terminal Process Management at duisport" published in *Business Process Management Cases – Volume 2*	UDE				#S.DS.3	Conference proceeding "Cost Fairness for Blockchain-Based Two-Party Exchange Protocols" presented at the *2020 IEEE International Conference on Blockchain*	UKL
ON-SITE DISSEMINATION EVENTS	#OS.D.1	PortForward, SmartShip and DataPorts meeting workshop for future collaboration	ITI	#OS.DA.1	"A data platform for the cognitive ports of the future" presentation at the *Big Data Value workshops* : Industrial Data Platforms	ITI	#OS.P.1	Meeting with the Chief Information Officer (CIO) of logistics software producer EPC.	UKL	#OS.DS.1	Web Application Security: Current Developments session at the *Software Practicioner Conference OOP*	UKL
	#OS.D.2	"Towards a smart port: A Digital Ecosystem Creation" presentation at the *22nd Infocom* world conference	OTE, ICCS	#OS.DA.2	"A data platform for the cognitive ports of the future" presentation at the *EUHubs4Data Kick Off meeting – IDSA session*	ITI, UDE	#OS.P.2	Meeting with the CIO of the ship propulsion producer Schottel	UKL	#OS.DS.2	"Eliciting Privacy/fairness solution requirements and generating action plans" session at the *FoMSESS Workshop: Engineering Trustworthy Data-Intensive Systems with Software Models*	UKL
				#OS.DA.3	"A data platform for the cognitive ports of the future" presentation at the *European Big Data Value Forum - EBDVF 2019*	ITI, UDE, UPV	#OS.P.3	Dissemination meeting with internal managers	EVR	#OS.DS.3	"Designing privacy-aware reference architecture" session at the *FoMSESS Workshop: Engineering Trustworthy Data-Intensive Systems with Software Models*	UKL
				#OS.DA.4	Dissemination meeting with member of the German State Parliament concerning AI and digitalization projects	UKL	#OS.P.4	Dissemination meeting with Operations department	EVR	#OS.DS.4	DataPorts exhibition at the *BodyPass - The Future of 3D Human Body Data for Health and Industry*	UPV
				#OS.DA.5	Presentation of initial lessons learnt from DataPorts at the *BDV PPP Technical Committee Meeting #6*	ITI						

VIRTUAL DIFFUSION CHANNELS	id	Description	Partners
	#VD.N.1	First release of the website of DataPorts https://dataports-project.eu/	UPV
	#VD.N.2	Logo, corporate identity, supporting material (i.e., flyers, brochure, presentation templates etc.) creation	UPV
	#VD.N.3	Social media accounts' creation	UPV
	#VD.N.4	Publications on local media and press	UPV, UDE, EVR, VPF, OTE
	#VD.N.5	Blogposts in DataPorts website	UPV, ICCS, PRO, ITI, EVR, UDE
	#VD.N.6	OTE's Newsletter	OTE
	#VD.N.7	Digital Newsletter	UPV
	#VD.N.8	DataPorts poster creation	UPV

Figure 51 – Dissemination Matrix (M12)