Horizon 2020 Program (2014-2020)

Big data PPP

Research addressing main technology challenges of the data economy

Industrial-Driven Big Data as a Self-Service Solution

D7.5: Second report on Dissemination strategy and activities[†]

Abstract: This deliverable presents the work performed in WP7 – Task 7.2 "Communication strategy triggering awareness and new business opportunities" and consists of the reporting and monitoring of the respective dissemination and communication activities during the second year of the project (M13-M24). As the objective of WP7 is to supervise the integrity and consistency of all dissemination efforts for creating awareness on the I-BiDaaS achievements, the main purpose of the current deliverable is to report the dissemination, collaboration and communication activities followed during the 2nd year of the project as well as the results from these activities based on which project's dissemination plan was updated respectively. This report is the second out of three reports that will be submitted on yearly basis.

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List of Abbreviations

BDV Big Data Value

D Deliverable

DoW Document of Work

EC European Commission

EAB External Advisory Board

ICT Information Computer Technology

KPI Key Performance Indicator

M Month

PoC Proof of Concept

PPP Public-Private-Partnership

SME Small Medium Enterprise

TC Technical Committee

WP Work Package

Executive Summary

Having reassessed the results of the first year's dissemination efforts, a first revision of the dissemination strategy aimed at achieving the defined KPIs as described in the DoW led to significant progress during the second year of the project regarding the dissemination activities. The collaboration and involvement of all partners was the key to achieving the objectives in the second year of the project.

Dissemination material created during the first year of the project was updated while new content was developed as part of the dissemination activities during the second year.

I-BiDaaS web presence has been enhanced with posts on all social networking channels of the project, as well as with new material uploaded on the website on a constant basis.

In addition, the publication of articles in both scientific journals and conference proceedings alongside the participation in conferences, workshops, and other events of similar nature, greatly enhanced the project's reach to a broader audience, both technical and business.

Collaboration with other projects and active participation in collaborative initiatives has been established, adding more value to the dissemination efforts of the project.

Following the recommendations provided during the first review, we redefined our approach regarding collaboration with other projects. We intensified our interaction with BDV PPP making the most of the toolkit it offers and finding ways for our data providers to communicate lessons learned by their experience with the I-BiDaaS platform.

1 Introduction

1.1 About this deliverable

This deliverable serves as a report for the dissemination, collaboration and communication activities for I-BiDaaS under WP7 and carried out during the second year of the project. In addition, it provides an update on the project dissemination strategy presented at M12 (D7.3, December 2018).

KPIs derived from the comparison between design and action, highlighted strengths and weaknesses derived from the dissemination strategy. Recommendations provided alongside with conclusions drawn from the KPIs form the basis for the design of future steps for the dissemination strategy.

1.2 I-BiDaaS dissemination strategy at a glance

Figure 1 below depicts the I-BiDaaS dissemination strategy in conjunction with the successfully implemented actions as they have been thoroughly described at M12 (D7.3, December 2018). Future actions concerning dissemination activities are also presented in the Figure 1.

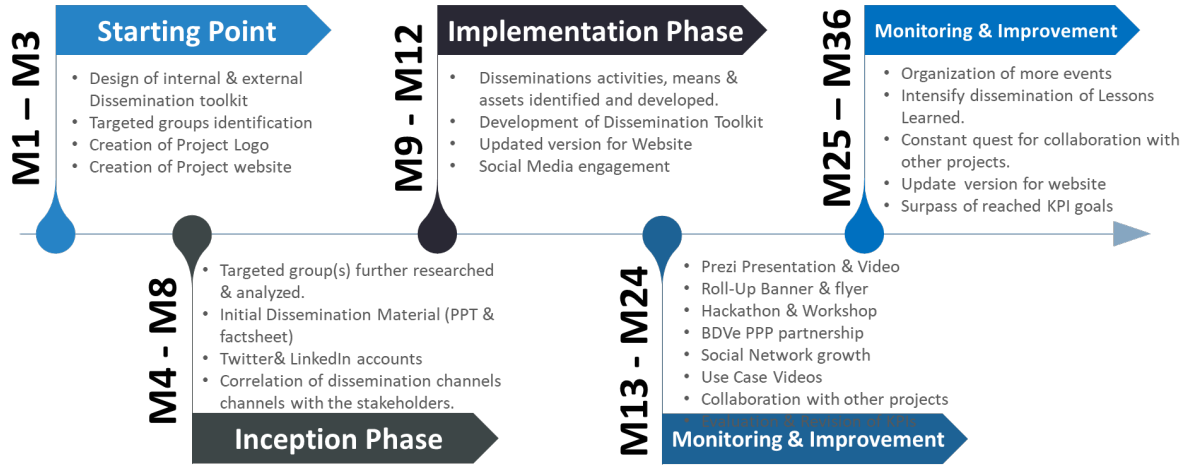


Figure 1. Dissemination Strategy Plan

Considering the life cycle of the project, the dissemination team of I-BiDaaS established an internal mechanism of specific tools and techniques for the systematic, targeted and complete dissemination of the project achievements and progress. This internal mechanism provided us constant and continuous work routines on a daily basis for more efficient dissemination. Tools & techniques used include:

- Event Planner: a structured tool for recording the association of I-BiDaaS project to an Event of interest for dissemination purposes.
- Dissemination Events List: A tool used to collect dissemination activities, and participation from project partners to various dissemination events.
- Publications Lists: used to keep track of all publications created by the I-BiDaaS Consortium.

- Dissemination Meetings: Dissemination team conducts conference calls and meetings on a regular basis to keep synchronization of information concerning the past, present and future dissemination activities.

As shown in figure 1 above the dissemination activities implemented during the 2nd year of the project (M12-M24) include:

- Updated Version of Project's Website: I-BiDaaS website was updated twice during the 2nd year of the project with the addition of a publications page and a blog page.
- Creation of Flyer, Poster & Roll-Up Banner: A Flyer, a Poster and a Roll-Up Banner have been added to I-BiDaaS printable dissemination material.
- Development of I-BiDaaS YouTube Channel: I-BiDaaS social media network has been expanded with the addition of a YouTube account.
- Organization of Dissemination Events: 1 Info Day-Workshop, 1 Hackathon and two promotional events were successfully organized.
- BDV PPP Collaboration: I-BiDaaS collaboration with BDV PPP was well-established, providing us the opportunity for exploitation of the full BDV dissemination toolkit.
- Use Case Videos & Prezi Video: audiovisual dissemination toolkit was enhanced with the creation of videos demonstrating the I-BiDaaS platform for some use case and the creation of a Prezi presentation for demonstration purposes during I-BiDaaS participation in major ICT events.

1.3 Document structure

The present document is structured as follows:

Section 2 provides an overview of the I-BiDaaS dissemination strategy originally designed and contrasts it with the strategy developed considering the evolution of the project.

In Section 3, dissemination material created during the 2nd year of the project is presented.

Section 4 enlists all dissemination activities performed by the consortium.

Section 5 brings the web presence of the project to attention with respect to the official web site and the social media channels that are in place for dissemination purposes.

Section 6 introduces the concept of SMEs communities' engagement in I-BiDaaS as part of the revised dissemination strategy in order to reach a broader audience and focusing on more defined targeted groups of stakeholders.

Section 7 overviews the collaboration activities during the second year of the project alongside with the new opportunities for collaboration with other projects.

In Section 8, KPIs and goals are revised, dissemination strategy initially planned is analysed with regards to the actual strategy followed. Future actions and plans are also briefly mentioned.

2 Monitoring project's evolution

Following the guidelines defined in D7.3, I-BiDaaS dissemination team analysed project's evolvement following three basic dimensions:

Areas of interest

It is evident from the project's achievements so far that the areas of interest are unchanged. It stands to reason that some of them may have been revised in terms of expansion as the project progresses. However, in principle, I-BiDaaS still aims to empower IT and non-IT big data experts to utilize and interact with big data technologies easily.

Assets to disseminate

During the 1st year of the project, assets to disseminate were more of a conceptual nature and highlighted the various components of the I-BiDaaS architecture. However, after the release of the MVP on M12, the dissemination team focused on communicating more tangible assets concerning the project. MVP has served as the leading spear of the dissemination and communication activities. In addition, the 1st prototype, followed on M18, has also become a valuable asset to effectively raise the awareness for the project and a powerful marketing tool on the search for future clients.

Target groups for dissemination

When analysing the outcome of the dissemination activities reported during the 1st review, it was evident that I-BiDaaS dissemination team had to include lessons learned by the use cases to the dissemination activities towards engaging more efficiently all targeted groups as these have been identified on D7.3.

D7.5 is also aligned with the definition of the market innovation strategy detailed in D7.2, section 2. The vision is to position the project products in a new sight while catering to the customers' needs. Therefore, identification of target groups is a continuous task performed in the different events, where the use of different tools as the chatbot helps to form focus groups for further contact, updates, and recognize potential early adopters for testing the platform. The activation of different industrial clusters from academic partners is also part of the strategy to reach potential end-users to test the platform and collect feedback.

3 Creation elaboration and provision of dissemination material

3.1 Design of Project Promotional Material

The key printed tools for the dissemination of the I-BiDaaS project consists of:

3.1.1 Flyer

A single sheet, A5 size, double-fold project flyer in English has been developed to be distributed for communication/dissemination and awareness-raising purposes during events, conferences, and workshops. The external part of the flyer displays, on the right-hand side, the project logo & name, the aim and the objectives of the project in an abstract way and on the left-hand side, various information (consortium members and each partner logos, website, dissemination channels, contact details, QR code), the programme under which it has been funded and the logos of both the European Commission and the Big Data Value (BDV). (See Figure 2).

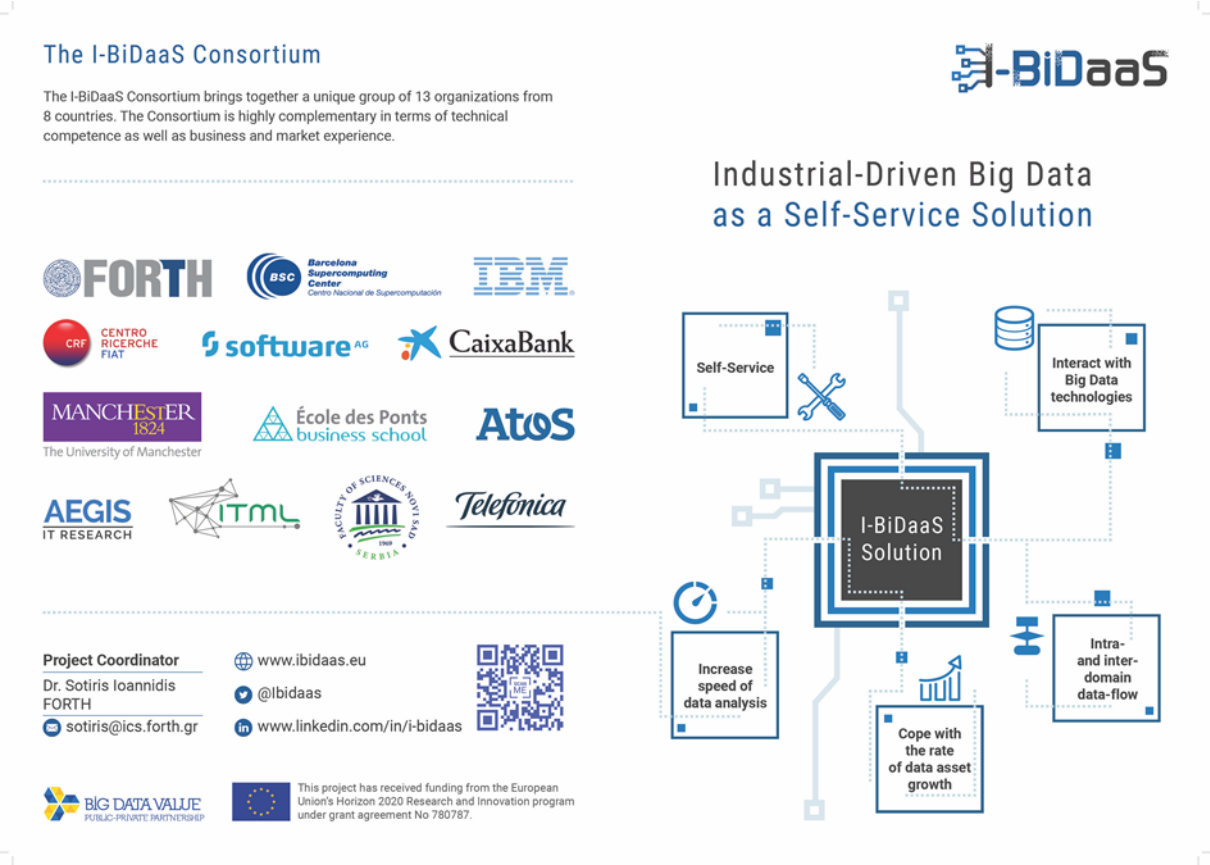


Figure 2. I-BiDaaS Flyer (external side)

The internal part of the flyer is also structured in two pages. A brief description of the survey about the European Data Economy that motivated I-BiDaaS is presented. Moreover, the benefits of using I-BiDaaS, the functionalities for both IT and non-IT users and the application domains that the solution will be validated are given on the internal part. (See Figure 3).

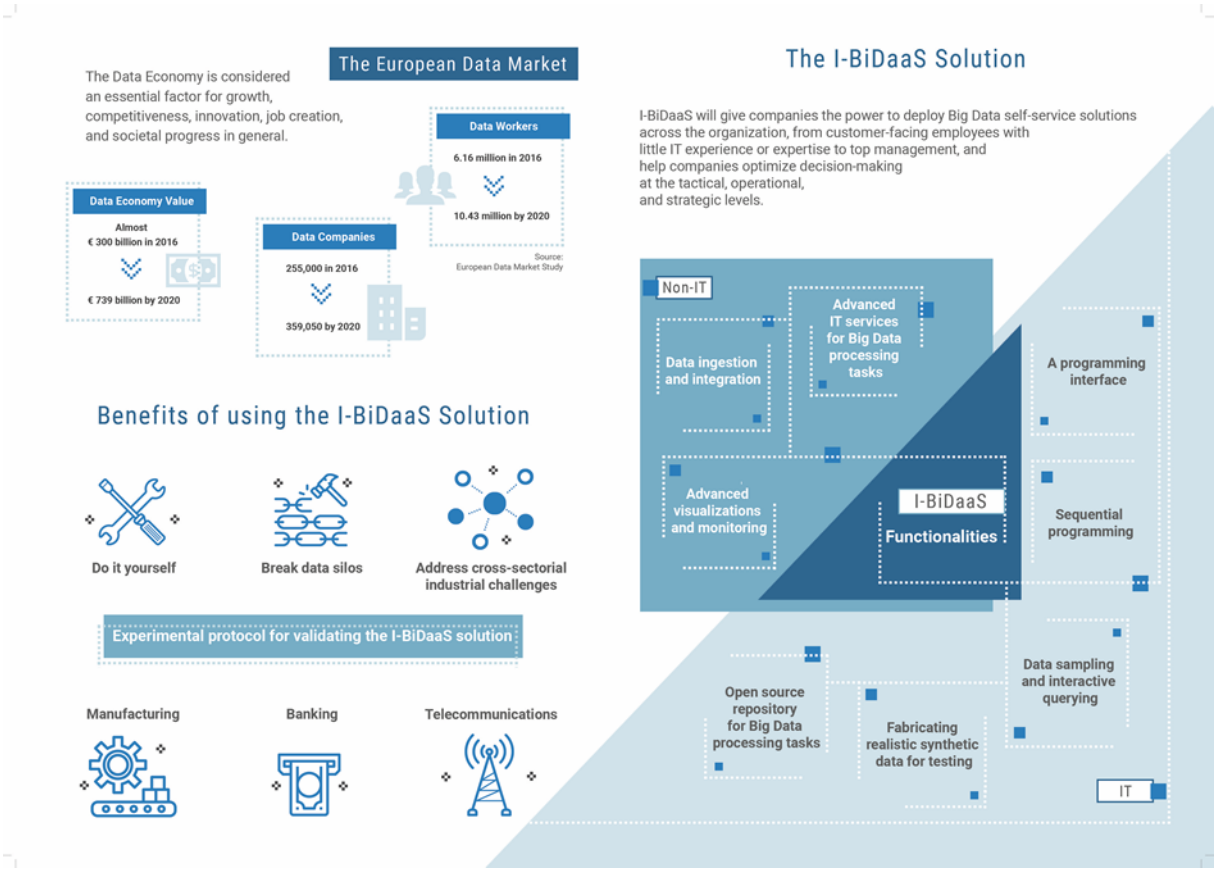


Figure 3. I-BiDaaS Flyer (internal side)

This flyer was printed in 1500 copies to be distributed at each event project partners participate in. A printable version of the flyer along with printing instructions is also available for partners' use in the SVN repository, the internal repository the consortium is using. The flyer is also available on the public website, under the 'Dissemination Material' section of the 'Downloads' tab. It has been and will be distributed online via social networks and interested websites.

3.1.2 Poster & Roll-up Banner

In the same line, a poster and a roll-up banner have also been created to support the different dissemination activities of the project (See Figure 4). The content is similar to the flyer that has already been described in the previous sub-section. Posters and banners will be used at events that the project will organise or contribute to. It is expected that their appearance in appropriate places will attract the attention of potential stakeholders and other audiences, especially during events, conferences, and workshops. They will be printed in a few copies since they can be re-used. Printable versions of the poster and the banner, along with printing instructions, are available for partners' use in the SVN repository.

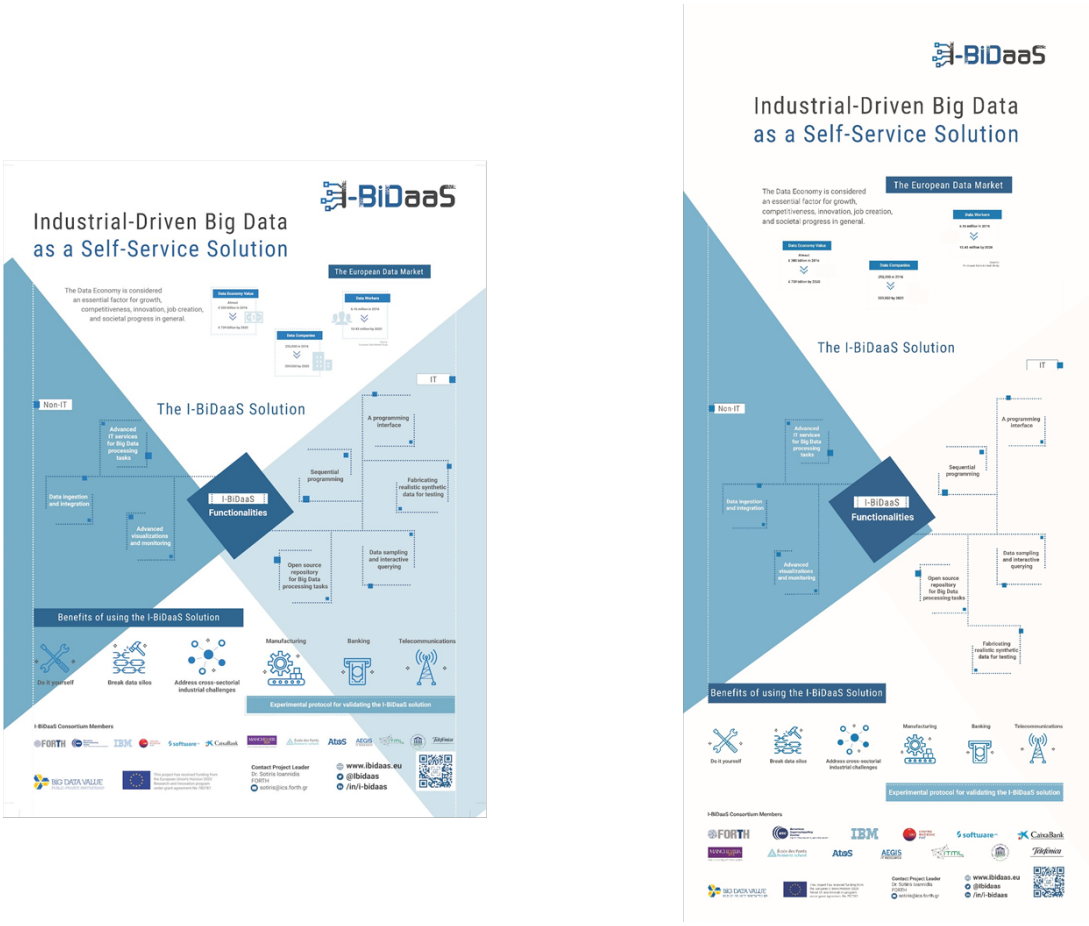


Figure 4. I-BiDaaS Poster & Roll-Up Banner

3.2 Prezi overview presentation and video

During the beginning of the 2nd year of the project, a Prezi presentation & Video were created for the I-BiDaaS project. The purpose of this audio-visual material was to serve as publicity footage playing on repeat during I-BiDaaS presence in major Big Data Events such as conferences and summits. The Prezi presentation is available publicly online[1] and has been extensively used as an introductory presentation for our project. Figures 5 and 6 below show some slides of I-BiDaaS Prezi presentation. The Prezi presentation video is also intended to be used by partners as a backup marketing promotion tool for the project on their individual exploitation paths.

[1] https://prezi.com/view/XU6eUOAWxtYIwPseAS5C/

Figure 5: I-BiDaaS Prezi presentations intro

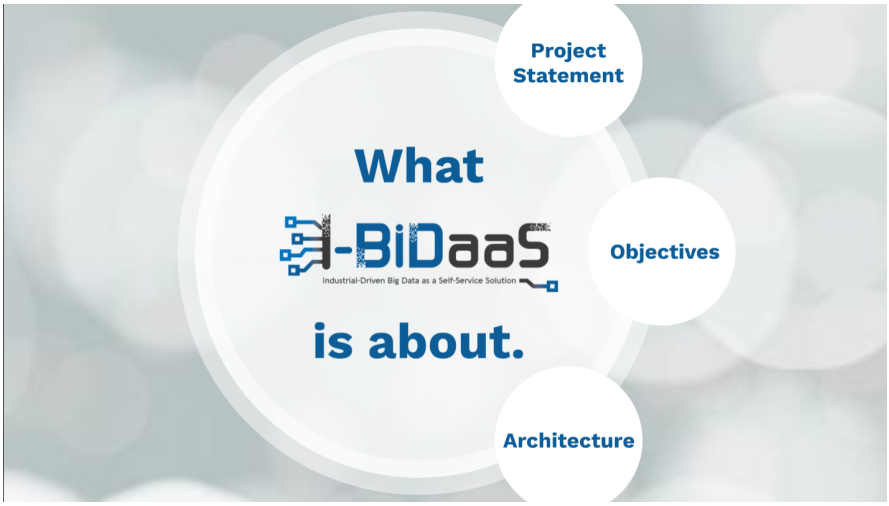


Figure 6. I-BiDaaS Prezi presentation slide

3.3 Demonstration videos

3.3.1 Demonstration Video by CAIXA

In this I-BiDaaS demonstration video[2], a CAIXA user explains the work that can be done with the use cases demonstrated until M18 in I-BiDaaS. It goes first through the explanation of the "IP relationships by IP address," in which the user can analyse a dataset of IP connections of the clients to online banking services, and extract some relationships between the users. Establishing this or any strong relationship between users (that allows assuring both users know each other) is very interesting to CAIXA in order to use the list of relationships to automatically validate future transactions between those related users, labelling them as "low fraud possibility".

[2] https://youtu.be/gb6fzXIFWxw

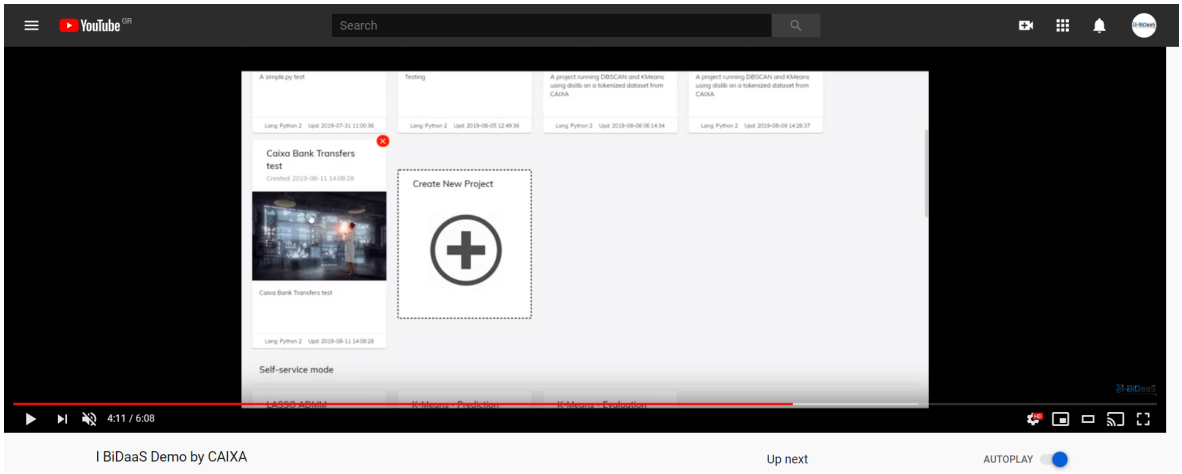


Figure 7. I-BiDaaS Demo Video by CAIXA

After that, another use case was explained, in which the user can analyse anomalies of bank transfers that are made by the employees in the name of a customer (when the customer goes to a bank office and orders it, properly identifying itself). In a fast and simple way, I-BiDaaS allowed to analyse the provided dataset with pre-define clustering algorithms that enable to view the information in a 3D graph for a fast-visual identification and selection of the bank transfer that present anomalies.

In summary, the video shows how smooth is the navigation of the users through the different pages of the I-BiDaaS platform. It explains the different steps in the management and analysis of new real or synthetic datasets for these use cases, showing how I-BiDaaS can help to improve agility in enterprise Big Data analytics.

3.3.2 TID "Quality of Service in Call Centers" Use Case

The TID "Quality of Service in Call Centers" use case demonstrator consists of a series of advanced visualisation tools and dashboards that have been developed for the I-BiDaaS platform. The purpose of the demonstrator is to show the ability to take data - to be able to understand it, to process it, to extract value from it, to visualize it, to communicate it - that results in improved user experience with the primary focus to empower an easy-to-use platform for the non-experts users.

As shown in the video, the TID QoS CC dashboard consists of three modules. The first module (top left side) provides an overview of the map of the geographic area of interest (in this case, we see the map of Spain), along with the locations of the call centres. In addition, the tool informs us about the percentage of processed calls that fall under three categories: 1) "positive," 2) "negative," and 3) "dropped." The "positive" calls are those cases that the CSI predictive model, that works in the background, identified as having a positive outcome. Similarly, the "negative" calls are those cases that the CSI predictive model identified as having a negative outcome and, hence, represent cases of unresolved issues. Last, the "dropped" calls are those that were never answered in time by the call centre representatives. From a quick look, the user can understand which call centres are functioning effectively and which call centres may be problematic. In addition, the performance of the call centres may signal unanticipated events that warrant immediate attention, such as antenna failures, overloaded networks, etc.

On the right side of the map module, we see a table that presents real-time information on all the call centres, but instead of percentages, it shows the raw counts. Such information is also useful in assessing the performance of the call centres, not so much in relation to other call

centres but with respect to the absolute values of internal KPIs. Furthermore, the table provides useful information about the average waiting times per call, as well as the average time needed to address an issue by a call centre representative.

Last, at the bottom part of the interface, we can see the module that shows for all call centres, or for a specific call centre, the progression of "positive," "negative," and "dropped" cases, as well as the average waiting/ resolution time, over time. More specifically, this module offers another approach to understanding the data by incorporating the temporal dimension and allows the user to identify unique or recurrent patterns in the performance of the call centres.

In summary, the video shows how simple and intuitive is the navigation of the users through the different pages of the I-BiDaaS platform. It explains the different steps in the management and analysis of real or synthetic datasets, showing how I-BiDaaS can help to improve agility in enterprise Big Data analytics. More importantly, it accomplishes its objective in masking the high throughput and overwhelming complexity of the algorithms and analytic tools that run in the background, by transforming big data streams into focused small nuggets of information with high business value and utility.

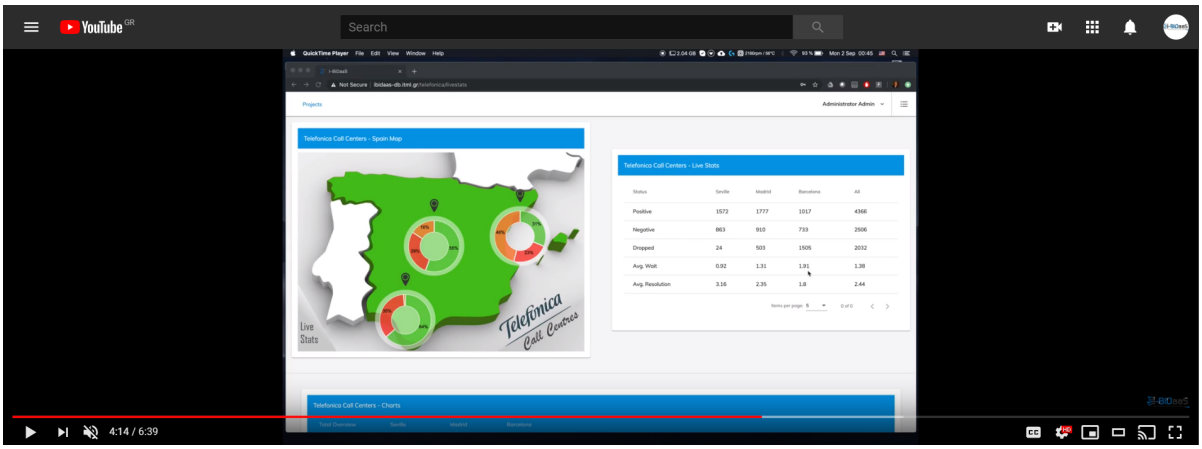


Figure 8. I-BiDaaS Demo Video by TID

3.3.3 Demonstration Video by UNSPMF (Generic Case)

The I-BiDaaS platform self-service mode for the generic use case is presented in a demo video[3]. The video demonstrates the use of algorithms already integrated into the platform: k-means and ADMM Lasso. It explains the idea of providing a wide set of scalable machine learning algorithms implemented in COMPSs. The first part of the video is a demonstration of the use of the k-means algorithm. The explanation of the basic idea of the algorithm is provided, as well as the innovative aspect of the scalable COMPSs based implementation. The possibilities of user-friendly parameter tuning without coding and the intuitive, advanced visualization are also mentioned. The second part of the video describes the use of the predefined ADMM Lasso algorithm. Also, the option to easily adapt the code to various machine learning algorithms with minimal coding effort, by switching to the expert mode is also described. Finally, some additional functionalities planned for the future are also mentioned such as: using data summaries for semi-automatic data fabrication, hyperparameter tuning based on history, introducing a popup window with all relevant info about the observed algorithm.

[3] https://www.youtube.com/watch?v=QZt0RefR8RA

Figure 9. I-BiDaaS Demo Video by UNSPMF

3.4 Human-Computer Interaction: Chatbot

The use of digital marketing and conversational commerce tools as the chatbot might be the future of digital marketing and a useful resource to collect feedback from a different audience.

The chatbot is a software that starts and answers dialogs with users. The use of the chatbot offers different opportunities in terms of User Interface and User Experience (UI/UX), allowing clarity, efficiency, convenience, flexibility, consistency, and structured feedback[4].

ENPC proposed the use of a chatbot to collect feedback from the European Big Data Value Forum (EBDVF) event held in Helsinki in October 2019. The application of the chatbot allowed identifying different stakeholders, collecting contact information for further feedback. The audience had the opportunity to rate the platform, provide their impression, and express their needs regarding the different features of the platform (See Figure 10).

The results of the chatbot are also presented in D6.3 section 3.4 and D7.6 section 3.2. Following discussions between the consortium members, it was agreed to use the chatbot in future dissemination activities.

[4] https://www.invisionapp.com/blog/core-principles-of-ui-design/

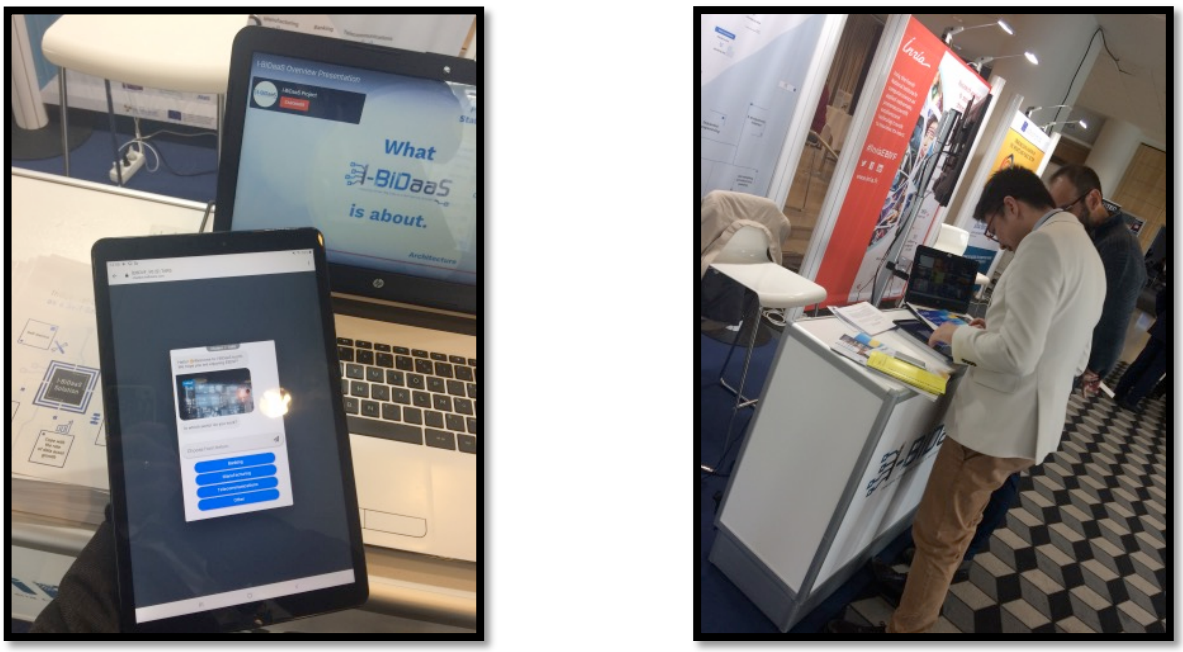


Figure 10. The deployment of a chatbot in the Big Data Value Forum '19 (EBDVF19)

4 Dissemination activities during the 2nd year of the project

4.1 Overview

Figure 12 outlines the recorded dissemination activities for I-BiDaaS that were carried out during the 2nd year of its development.

- Publications: I-BiDaaS had 9 publications during the 2nd year of the project out of 13 in total.
- Events: I-BiDaaS was represented in 16 events during the 2nd year of the project.
- Other dissemination activities: All the dissemination activities are tracked in the reporting document that is being updated monthly by all the partners of the consortium.

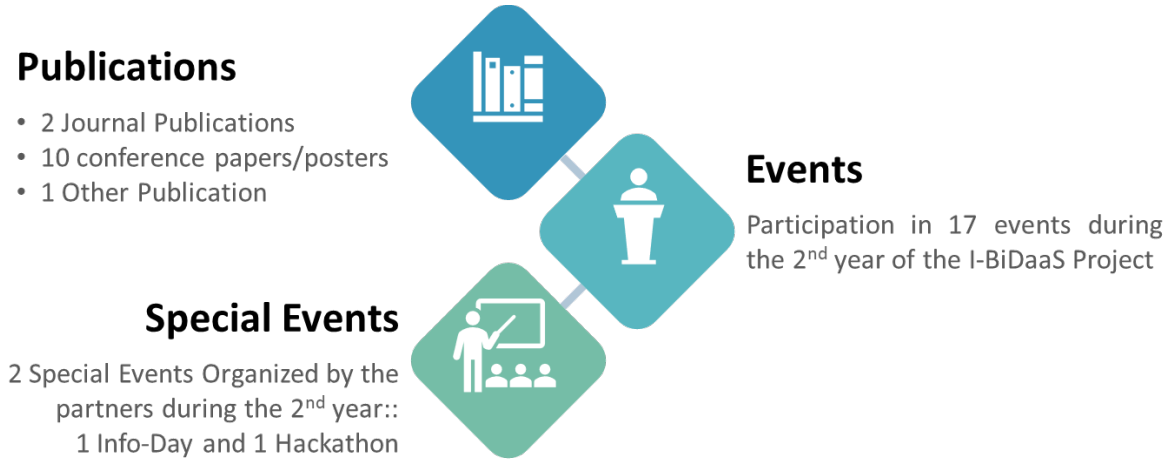


Figure 11. I-BiDaaS Dissemination Activities

4.2 Publications

4.2.1 Journal Publications

Table 1: List of Journal Publications during 2nd year of I-BiDaaS

Title of Journal	Title	Authors
IEEE Transactions on Automatic Control	Distributed second-order methods with an increasing number of working nodes	Nataša Krklec Jerinkić, Dušan Jakovetić, Nataša Krejić, Dragana Bajović
Computational Optimization and Applications, Springer	Exact spectral-like gradient method for distributed optimization	Dušan Jakovetić, Nataša Krejić & Nataša Krklec Jerinkić

4.2.2 Conference proceedings

Table 2: List of Conference Proceedings published during 2nd year of I-BiDaaS

Conference / Workshop	Title	Authors
33rd IEEE International Parallel & Distributed Processing Symposium (IPDS 2019), 20-24 May 2019, Rio de Janeiro, Brazil	An Architecture and Stochastic Method for Database Container	Kochovski Petar; Sakellariou Rizos; Bajec

	Placement in the Edge-Fog-Cloud Continuum	Marko; Drobintsev Pavel; Stankovski Vlado
1st Summit on Gender Equality in Computing (GEC 2019), 7 June 2019, Athens, Greece	High-performance encrypted network traffic inspection using hardware accelerators	Eva Papadogiannaki and Sotiris Ioannidis
2019 IEEE World Congress on Services (SERVICES), 8-13 July 2019, Milan, Italy	Towards Specification of a Software Architecture for Cross-Sectoral Big Data Applications	Ioannis Arapakis, Yolanda Becerra, Omer Boehm et al.
2019 IEEE World Congress on Services (SERVICES), 8-13 July 2019, Milan, Italy	Towards a Methodology for Evaluating Big Data Platforms	Evangelia Kavakli, Rizos Sakellariou, Vlado Stankovski
IEEE EUROCON 2019, July 1-4, 2019, Novi Sad, Serbia	Spectral-like gradient method for distributed optimization	Dusan Jakovetic, Natasa Krejic, Natasa Krklec Jerinkic
IEEE EUROCON 2019, July 1-4, 2019, Novi Sad, Serbia	Distributed Trust-Region Method With First Order Models	Aleksandar Armacki, Dusan Jakovetic, Natasa Krejic, Natasa Krklec Jerinkic
The 14th International Conference on emerging Networking EXperiments and Technologies, CoNext 2018, 4-7 Dec 2018, Heraklion/Crete, Greece	Efficient Scheduling for Concurrently Executed Network Packet Processing Applications on Heterogeneous Hardware Architectures (poster)	Giannis Giakoumakis, Eva Papadogiannaki, Giorgos Vasiliadis, Sotiris Ioannidis
Network and Distributed Systems Security (NDSS) Symposium 2019, 24-17 Feb 2019, San Diego, CA, USA	Please Forget Where I Was Last Summer: The Privacy Risks of Public Location (Meta)Data	Kostas Drakonakis, Panagiotis Ilia, Sotiris Ioannidis, Jason Polakis
ACM Celebration of Women in Computing: womENcourage 2019, 16-18/9/2019, Rome, Italy	GPU-accelerated encrypted network traffic inspection	Eva Papadogiannaki and Sotiris Ioannidis
IEEE Big Data 2019, December 9-12, Los Angeles, CA, USA	The OTree: Multidimensional Indexing with efficient data Sampling for HPC	Cesare Cugnasco, Hadrien Calmet, Pol Santamaria, Raül Sirvent, Ane Beatriz Eguzkitza, Guillaume Houzeaux, Yolanda Becerra, Jordi Torres, and Jesus Labarta

4.2.3 Other publications

Table 3: List of other publications during 2nd year of I-BiDaaS

Mean of Publication	Title	Authors
Universitat Politècnica de Catalunya. Departament d'Arquitectura de Computadors.	A framework for multidimensional indexes on distributed and highly available data stores.	Cesare Cugnasco, Yolanda Becerra, Jordi Torres

4.3 Events

I-BiDaaS Consortium invests in events targeted at industry and academia to showcase I-BiDaaS vision, impact and results, and to create an active community for the project that will

significantly enhance its entrance to the market. Table 4 below enlists all events that took place during the 2nd year of the project.

Table 4: List of events during the 2nd year of I-BiDaaS

Event Title	Place	Date
I-BiDaaS Info Day - Workshop on Big Data Analytics	Novi Sad, Serbia	22/1/2019
12th ACM International Conference on Web Search and Data Mining	Melbourne, Australia	11-15/02/2019
Network and Distributed System Security Symposium (NDSS)	San Diego, CA	24-27/02/2019
Data Works Summit 2019	Barcelona, Spain	18-21/03/2019
Hannover Messe Industrie (HMI)	Hannover, Germany	1-5/4/2019
Big-Data.AI Summit	Berlin, Germany	10-11/04/2019
IEEE EUROCON 2019	Novi Sad, Serbia	01-04/07/2019
IEEE International Congress on Big Data	Milan, Italy	08-13/07/2019
1st Summit on Gender Equality in Computing (GEC 2019)	Athens, Greece	6-8/6/2019
ISC HIGH PERFORMANCE 2020	Frankfurt, Germany,	16-20/06/2019
BDV PPP Summit 2019	Riga, Latvia	26-28/6/2019
Summer School on Network & Information Security (NIS 2019)	Heraklion, Greece	16-20/9/2019
ICT 2019	Helsinki, Finland	19-20/9/2019
BDV PPP - Technical Committee Meeting	Brussels (Belgium)	2/10/2019
European Big Data Value Forum 2019	Helsinki, Finland	14-16/10/2019
Data Science Conference	Belgrade, Serbia	19-20/11/2019
IEEE Big Data 2019	Los Angeles, CA, USA	9-12/12/2019

4.4 Future events

Planning ahead for 2020, I-BiDaaS dissemination team envisions the participation of the project in various major future events.

Table 5: List of Future Events in 2020

Event Title	Place	Date
Mobile World Congress	Barcelona, Spain	24-27/02/2020
4YFN	Barcelona, Spain	24-26/02/2020
10th International Conference on Information Society and Technology	Kopaonik, Serbia	8-11 March 2020
Big-Data.AI Summit	Berlin, Germany	1-2/04/2020
Smart City Week	New York, USA	03/2020
Circular Economy Symposium at Harvard	Cambridge, Massachusetts, USA	03/2020
ENPC Business School Study trip	Silicon Valley, USA	04/2020

2nd International Workshop on Smart Circular Economy (SmaCE 2020) co-located with IEEE DCOSS 2020	Marina Del Ray, L.A. California, USA	05/2020
Hannover Messe	Hannover, Germany	20-24/04/2020
World Data Summit 2020	Barcelona, Spain	1-2/10/2020
Big Things (Big Data Spain) Conference 2020	Madrid, Spain	11/2020

4.4.1 Hackathon organized by TID

With respect to organization of special events from I-BiDaaS partners, TID is planning to organize a hackathon in Barcelona by the end of February 2020. During this information event, a hackathon will take place to further engage the local community of stakeholders.

4.4.2 Workshop organized by CAIXA

CAIXA also plans to organize a Workshop on M28-M29 (April-May 2020) in Barcelona. It will be a full-day event in which the technology providers, together with CAIXA, will show I-BiDaaS platform and use cases, with sessions for discussion and limited hands-on with the attendants. On the one hand, the targeted public for the workshop will be CAIXA personnel involved in business processes related to the use cases evaluated in the project, as well as staff from other areas of CAIXA that could be potential users of the platform and can propose other use cases. On the other hand, other attendants are also expected from external stakeholders, such as technology and consultancy providers working on Big Data Analytics for CAIXA, to give a second opinion of the technology and to provide feedback in comparison with the tools used nowadays.

5 Web Presence & Dissemination of I-BiDaaS

5.1 I-BiDaaS Website

The I-BiDaaS project website remains a person-centric online portal providing easy-accessible information to the general public. It includes various information regarding the project concept, innovation capability, impact, domains, consortium, project results (including all publications, dissemination materials, presentations, deliverables) and news. Since M3, the website has been updated to a huge extent. These updates are presented in the following subsections.

5.1.1 Website structure

Aiming at boosting the networking activities and speeding all the project relevant information the website structure has been upgraded significantly as it is illustrated in Figure 13

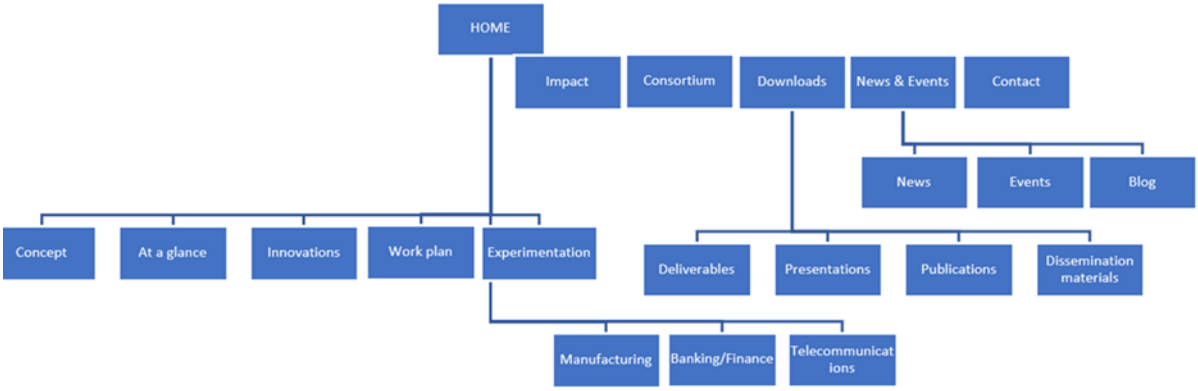


Figure 12. Website site map diagram

5.1.2 Website design (main page)

Trying to expand the project's audience and increase its accessibility by even more people, the website's look and design have been considerably modified (Figure 14). Currently, the site is easily reachable by various end-users regardless of their capabilities, type of devices, screen resolution or other features.

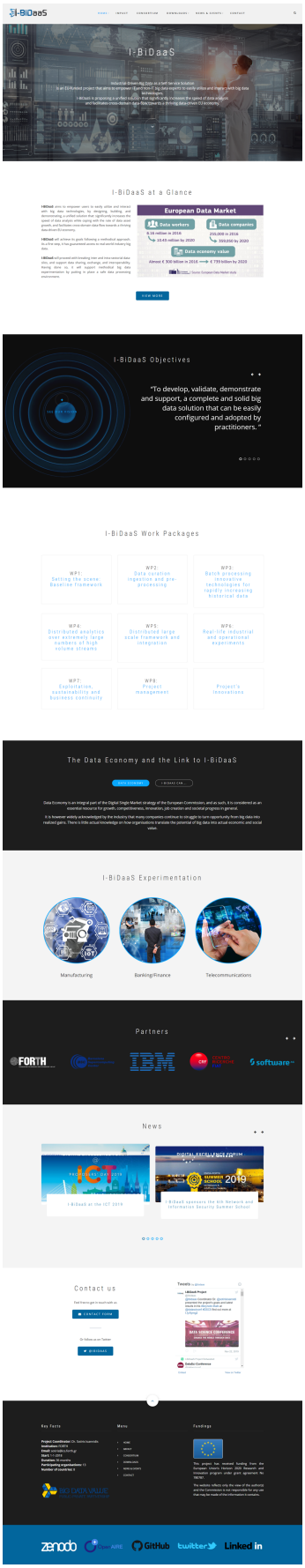


Figure 13. I-BiDaaS website homepage

5.1.3 Website content

The Home section providing general information about the project has also been upgraded and it is currently composed of five different subsections, namely 'Concept,' 'At a Glance,' 'Innovations,' 'Work Plan' and 'Experimentation.' Furthermore, the website's footer now includes several project relevant links and direct link to the social media pages (Figure 15).

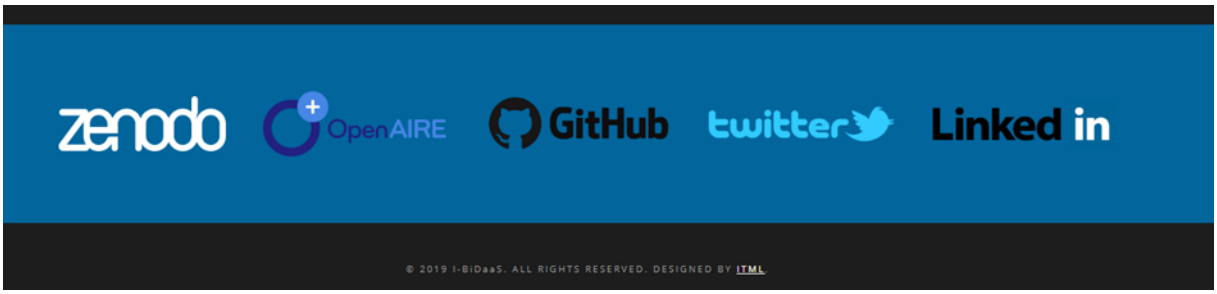
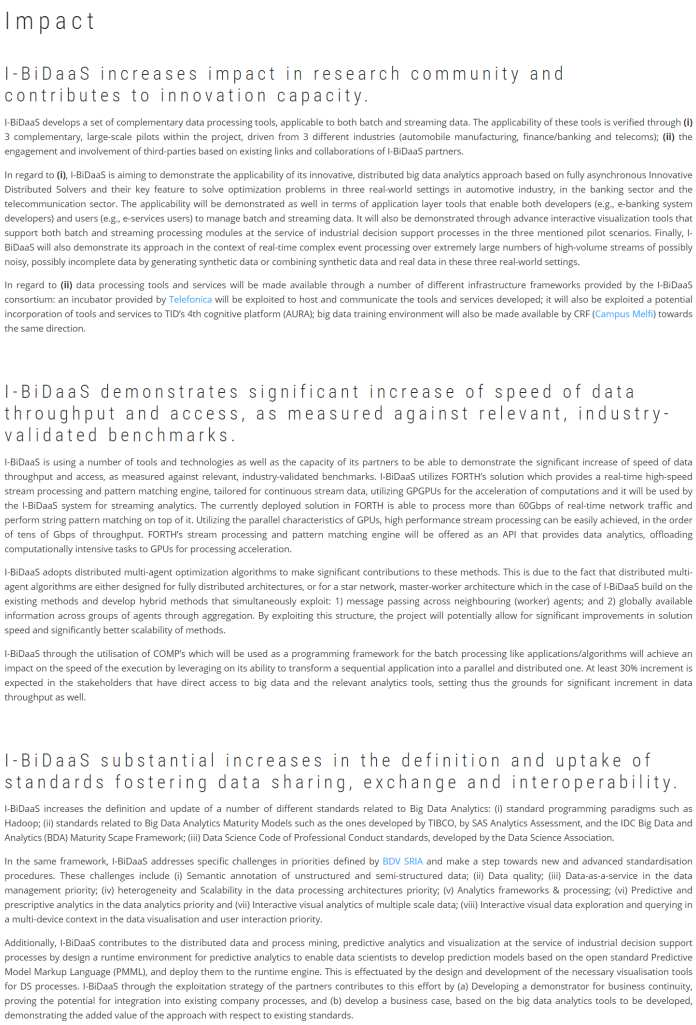


Figure 14. Social Media Links Footer

Aiming to emphasize the project impact, one new section has been added and named Impact (Figure 16).



Impact

I-BiDaaS increases impact in research community and contributes to innovation capacity.

I-BiDaaS develops a set of complementary data processing tools, applicable to both batch and streaming data. The applicability of these tools is verified through **(i)** 3 complementary, large-scale pilots within the project, driven from 3 different industries (automobile manufacturing, finance/banking and telecoms); **(ii)** the engagement and involvement of third-parties based on existing links and collaborations of I-BiDaaS partners.

In regard to **(i)**, I-BiDaaS is aiming to demonstrate the applicability of its innovative, distributed big data analytics approach based on fully asynchronous Innovative Distributed Solvers and their key feature to solve optimization problems in three real-world settings in automotive industry, in the banking sector and the telecommunication sector. The applicability will be demonstrated as well in terms of application layer tools that enable both developers (e.g., e-banking system developers) and users (e.g., e-services users) to manage batch and streaming data. It will also be demonstrated through advance interactive visualization tools that support both batch and streaming processing modules at the service of industrial decision support processes in the three mentioned pilot scenarios. Finally, I-BiDaaS will also demonstrate its approach in the context of real-time complex event processing over extremely large numbers of high-volume streams of possibly noisy, possibly incomplete data by generating synthetic data or combining synthetic data and real data in these three real-world settings.

In regard to **(ii)** data processing tools and services will be made available through a number of different infrastructure frameworks provided by the I-BiDaaS consortium: an incubator provided by Telefonica will be exploited to host and communicate the tools and services developed; it will also be exploited a potential incorporation of tools and services to TID's 4th cognitive platform (AURA); big data training environment will also be made available by CRF (Campus Mefit) towards the same direction.

I-BiDaaS demonstrates significant increase of speed of data throughput and access, as measured against relevant, industry-validated benchmarks.

I-BiDaaS is using a number of tools and technologies as well as the capacity of its partners to be able to demonstrate the significant increase of speed of data throughput and access, as measured against relevant, industry-validated benchmarks. I-BiDaaS utilizes FORTH's solution which provides a real-time high-speed stream processing and pattern matching engine, tailored for continuous stream data, utilizing GPGPUs for the acceleration of computations and it will be used by the I-BiDaaS system for streaming analytics. The currently deployed solution in FORTH is able to process more than 60Gbps of real-time network traffic and perform string pattern matching on top of it. Utilizing the parallel characteristics of GPUs, high performance stream processing can be easily achieved, in the order of tens of Gbps of throughput. FORTH's stream processing and pattern matching engine will be offered as an API that provides data analytics, offloading computationally intensive tasks to GPUs for processing acceleration.

I-BiDaaS adopts distributed multi-agent optimization algorithms to make significant contributions to these methods. This is due to the fact that distributed multi-agent algorithms are either designed for fully distributed architectures, or for a star network, master-worker architecture which in the case of I-BiDaaS build on the existing methods and develop hybrid methods that simultaneously exploit: 1) message passing across neighbouring (worker) agents; and 2) globally available information across groups of agents through aggregation. By exploiting this structure, the project will potentially allow for significant improvements in solution speed and significantly better scalability of methods.

I-BiDaaS through the utilisation of COMP's which will be used as a programming framework for the batch processing like applications/algorithms will achieve an impact on the speed of the execution by leveraging on its ability to transform a sequential application into a parallel and distributed one. At least 30% increment is expected in the stakeholders that have direct access to big data and the relevant analytics tools, setting thus the grounds for significant increment in data throughput as well.

I-BiDaaS substantial increases in the definition and uptake of standards fostering data sharing, exchange and interoperability.

I-BiDaaS increases the definition and update of a number of different standards related to Big Data Analytics: (i) standard programming paradigms such as Hadoop; (ii) standards related to Big Data Analytics Maturity Models such as the ones developed by TIBCO, by SAS Analytics Assessment, and the IDC Big Data and Analytics (BDA) Maturity Scape Framework; (iii) Data Science Code of Professional Conduct standards, developed by the Data Science Association.

In the same framework, I-BiDaaS addresses specific challenges in priorities defined by BDV SRIA and make a step towards new and advanced standardisation procedures. These challenges include (i) Semantic annotation of unstructured and semi-structured data; (ii) Data quality; (iii) Data-as-a-service in the data management priority; (iv) heterogeneity and Scalability in the data processing architectures priority; (v) Analytics frameworks & processing; (vi) Predictive and prescriptive analytics in the data analytics priority and (vii) Interactive visual analytics of multiple scale data; (viii) Interactive visual data exploration and querying in a multi-device context in the data visualisation and user interaction priority.

Additionally, I-BiDaaS contributes to the distributed data and process mining, predictive analytics and visualization at the service of industrial decision support processes by design a runtime environment for predictive analytics to enable data scientists to develop prediction models based on the open standard Predictive Model Markup Language (PMML), and deploy them to the runtime engine. This is effectuated by the design and development of the necessary visualisation tools for DS processes. I-BiDaaS through the exploitation strategy of the partners contributes to this effort by (a) Developing a demonstrator for business continuity, proving the potential for integration into existing company processes, and (b) develop a business case, based on the big data analytics tools to be developed, demonstrating the added value of the approach with respect to existing standards.

Figure 15. Impact Page

Currently, the I-BiDaaS's events and news are located under the News and Events section (Figure 17), where the project's upcoming and completed events/activities are continually being published. A new subsection named "blog" has been added to this section where project partners are publishing project related topics/articles.

Figure 16. News & Events Pages

Overall, since M3, the website has been updated to a great extent both regarding functionality and graphical content. Besides, the website is constantly being enriched with new information (various completed and upcoming events) and valuable materials (articles, blog news, completed deliverables, videos, presentations, etc).

5.2 Social Media

I-BiDaaS utilizes the most popular social media channels in order to disseminate project's assets and progress. An addition to the Twitter account and the LinkedIn profile that where created during the 1st year of the project, a YouTube channel was created for I-BiDaaS during the 2nd year.

5.2.1 Twitter Profile

Twitter has proven to be the most efficient social media channel for I-BiDaaS online dissemination purposes. Table 6 below outlines the statistics for I-BiDaaS twitter account as those are measured by the twitter analytics dashboard.

Table 6: Twitter Analytics

Twitter Analytics (11/2019)	
Tweets	511
Followers	192
Visits	986
Mentions	284
Audience Reached	271940

5.2.2 LinkedIn Account

I-BiDaaS LinkedIn profile utilizes the networking opportunities the social network provides by uploading posts and content targeting the audience of both scientific and business nature. Table 7 below outlines the statistics for I-BiDaaS LinkedIn profile as those were measured by the corresponding tool used within the social media platform:

Table 7: LinkedIn Profile Analytics

LinkedIn Analytics (111/2019)	
Connections	126
Posts	75
Total Posts Views	9330

5.2.3 YouTube Channel

During the 2nd year of the project, a YouTube channel was created for I-BiDaaS to effectively disseminate the demonstration videos created by the use cases of the I-BiDaaS platform. Table 8 below outlines the statistics for I-BiDaaS YouTube channel as those were measured by the corresponding tool used within the social media platform:

Table 8: YouTube Channel Analytics

YouTube Analytics (11/2019)	
Subscribers	10
Videos Uploaded	5
Total Views	162
Total Users reached	822

5.3 BDV PPP Activities

I-BiDaaS project is included in the range of projects under the auspices of the BDV PPP, and since the 1st year of I-BiDaaS, constant collaboration with the BDV PPP has been part of the dissemination strategy plan.

A communication channel between the I-BiDaaS dissemination and the BDV PPP has been established since the end of the 1st year of the project. During the 2nd year of I-BiDaaS there has been a collaboration on social media via post sharing on a regular basis. BDV PPP has been aiding I-BiDaaS dissemination efforts by sharing our web content on its social media and its website.

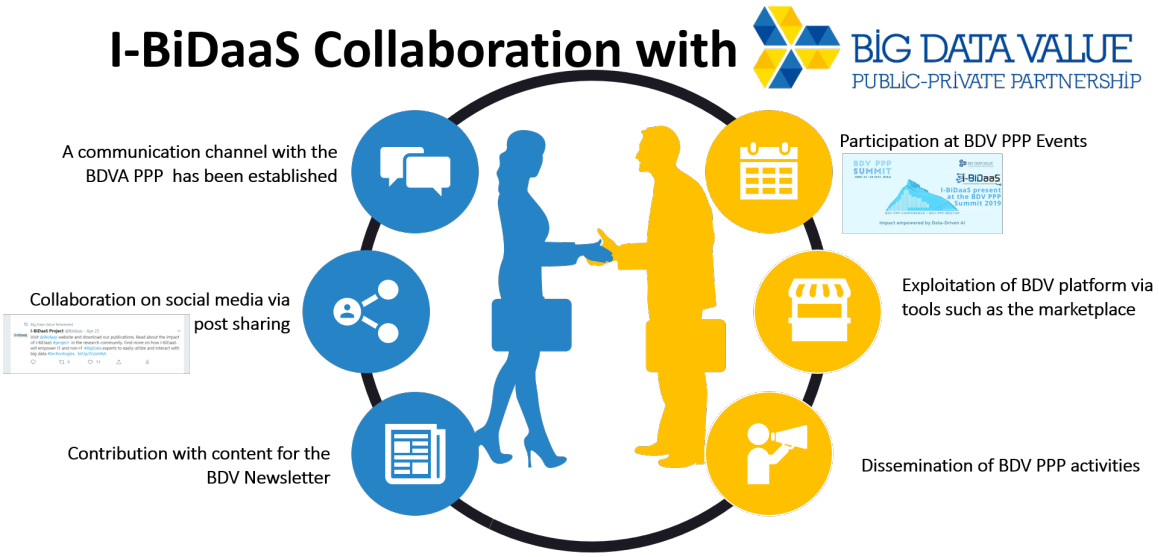


Figure 17. I-BiDaaS Collaboration with BDV - PPP

I-BiDaaS has been actively involved in all BDV PPP Events that took place during the 2nd year of the project. More specifically:

- Our project was one of the main Exhibitors during the BDV PPP Summit of 2019 that took place in Riga on June 2019.
- I-BiDaaS was represented in BDV PPP - Technical Committee Meeting that was conducted in Brussels on October 2019. The team presented the project and the use cases, the dissemination channels (YouTube and Prezi), the technologies used and being improved (COMPSs and HECUBA) and the challenges. It was of the general opinion of the meeting that one of the challenges of the European Projects is to provide the business approach. The team used this opportunity to mention the application of the innovative Dynamic Business Model (DBM) approach and raised awareness among other business developers. The team also had the opportunity to highlight I-BiDaaS differentiation elements and its participation in the sector of Artificial Intelligence. Finally, the team proposed to include the business approach in the next TC meeting on the Q1 of 2020.
- The I-BiDaaS dissemination team took advantage of the BDV Forum in Helsinki on October 2019 and was able to demonstrate the prototype. The team also presented the chatbot to the audience of I-BiDaaS booth and collected feedback and contact information from potential end-users (see section 3.4).
- Finally, since M12, I-BiDaaS dissemination team has started exploring dissemination means offered by the BDV PPP to evaluate the most effective ways for the exploitation of those means, such as the utilization of the BDV PPP innovation marketplace. More specifically, I-BiDaaS dissemination team was offered a short webinar on October 2019, by Dr. Muluneh Oli from EIT Digital that runs the BDV-PPP online toolkit, with respect

to the marketing exploitation possibilities for I-BiDaaS by the use of the Innovation Marketplace.

6 SME's communities engaged in I-BiDaaS

SME's communities connect SMEs to their peers by discipline, industry, or geographies – enabling powerful collaboration, strengthening networks, fostering research, surfacing experts, and enhancing knowledge, thus engagement of SME's communities in I-BiDaaS will prove beneficial for dissemination of the platform in the long run and especially in terms of expanding reach to targeted audience as it has been recommended by the M18 review. In view of the above, the dissemination team of I-BiDaaS has already initiated targeted efforts to engage SMEs communities.

6.1 Engagement of Serbian Data Science community

Serbian Data Science (SDS) community exists for several years, and there were a lot of activities over the years. time. Engagement of SDS community in I-BiDaaS initiated in January 2019 with the organisation of the INFO DAY at the UNSPMF in Novi Sad. SDS community plans to make a roadshow through all University centres in Serbia and organize meetups there to connect with industry, academia, and other organizations and institutions to expand community and improve collaboration. I-BiDaaS scientific and technical coordinator Dusan Jakovetic and external advisory board member Ilija Susa participated at a Data Science Meetup held at the Startit Center in Novi Sad, Serbia. The meetup was organized by the Serbian data science community as part of a roadshow of events across several Serbian cities aimed at promoting data science, its community, and related activities. The meetup featured three talks, by Ilija Susa (Content Insights; I-BiDaaS external advisory board member), Dusan Jakovetic (University of Novi Sad; I-BiDaaS scientific and technical coordinator), and Oskar Marko (BioSense Institute Novi Sad). As part of his talk, Dusan presented examples of data science applications featured within I-BiDaaS.

6.2 Engagement of Praxi Network

PRAXI Network is an established technology transfer organization with long-standing experience in assisting SMEs and research organizations throughout Greece to achieve cross-border technological cooperation. It is a distinct administrative unit operating within the Foundation for Research and Technology – Hellas (FORTH).

As National Contact Point in Greece for "Horizon 2020", PRAXI provides guidance, practical information, and assistance on all stages of participation in Horizon 2020 including dissemination toolkits such as organization of information events, targeted workshops and training. By exploiting those PRAXI Network services, I-BiDaaS dissemination team plans to raise awareness of the project and the platform in Greece in 2020.

6.3 Engagement of SME Community by ENPC

The Ecole des Ponts Paris Tech[5] (ENPC) companies' network is composed of big companies, SME's and the public sector[6]. At ENPC, real-world business practices are at the heart of what is taught.

[5] http://www.enpc.fr

[6] http://www.enpc.fr/en/learn-about-our-partners

To understand the need of the companies, there are three main strands to the cooperation between Business and School: hiring, training, and innovation. ENPC stands ready to establish long-standing bonds between Company and School of mutual benefit to all.

From the innovation point of view, at ENPC is possible to develop companies' expertise by placing innovation at the heart of their activities. To keep that essential step ahead, ENPC employs all their skills to support companies' competitiveness through a diverse range of partnerships designed to boost innovation and development. There are different ways of establishing "tailored," robust and lasting partnerships. The partnerships offer "made-to-measure" solutions modelled to generate innovation, develop expertise, and increase companies' competitiveness.

Co-Innovation is a way to develop competitive advantage by pooling the complementary skills of different actors: big companies, SMEs, researchers, entrepreneurs, and students.

The Fondation des Ponts[7] contributes to the School's national and international impact by developing relations with public and private companies, in particular to adapt the training and research conducted by the School to the needs of the national and world economy.

[7] https://www.fondationdesponts.fr/

7 Collaboration activities

7.1 Collaboration strategy in a glance

Collaboration is a fundamental concept in terms of approaching and driving innovation. In this context, I-BiDaaS focuses on cooperating with and contributing to other related European projects. This will thus ensure the wide diffusion and active promotion of ideas and project results to the target audience. As the basic idea behind the collaboration is that projects working in the same areas can have synergies to exploit, can complement each other both in research and business, can join forces to reach their target audience, can reach the necessary critical mass to have a real impact, and so on.

To this end, I-BiDaaS consortium members are willing to provide contributions to the following activities:

- The exploitation of synergies / technical concentration: participation in workshops, joint meetings with other projects
- Joint activities for exchange, dissemination, and training.
- Production and dissemination of publications aimed for communication with the general publicCoordination of standardization efforts.
- Contribution to Open Source repositories, and projects.

7.2 Collaboration with other Projects

7.2.1 I-BiDaaS & DataBench

Table 9: I-BiDaaS & DataBench

Characteristics	Description
DataBench formal overview	At the heart of DataBench is the goal to design a benchmarking process helping European organizations developing Big Data technologies to reach for excellence and continuously improve their performance, by measuring their technology development activity against parameters of high business relevance.
	DataBench will investigate existing Big Data benchmarking tools and projects, identify the main gaps, and provide a robust set of metrics to compare technical results coming from those tools.
I-BiDaaS in comparison to DataBench	Both projects occupy themselves with Big Data.
	Both projects aim to facilitate Big Data exploitation with the development of relevant frameworks.
	The DataBench project addresses a significant gap in the current benchmarking community's activities by providing certifiable benchmarks and evaluation schemes of BI-DT performance of high business impact and industrial significance.
	I-BiDaaS aims to an end-to-end solution, with respect to Big Data exploitation by end-users with little or no big data analytics experience.
Concrete collaboration activities During 2nd year	I-BiDaaS data providers have participated in the DataBench survey.

7.2.2 I-BiDaaS & DITAS

Table 10: I-BiDaaS & DITAS

Characteristics	Description
DITAS formal overview	DITAS project (Data-intensive applications Improvement by moving daTA and computation in mixed cloud/fog environmentS) goes in this direction by proposing a novel approach for developing data-intensive applications based on Virtual Data Containers (VDC), which let the developers simply define the requirements on the needed data, expressed as data utility, and take the responsibility of providing these data timely, securely, and accurate by hiding the complex underlying infrastructure composed by different platforms, storage systems, and network capabilities.
	To achieve this goal, VDC will implement data and computation movement strategies to decide where, when, and how to save data – on the cloud or on the edge of the network – and where, when, and how to compute part of the tasks composing the application to create a synergy between traditional and cloud approaches able to find a good balance between reliability, security, sustainability and cost.
DITAS in comparison to DITAS	Both projects occupy themselves with Data and Big Data.
	Both projects aim to facilitate Big Data exploitation with the development of relevant frameworks.
	The DITAS project aims to provide a complete framework to facilitate the development of data-intensive applications in mixed cloud/fog environments.
	I-BiDaaS aims to an end-to-end solution for Big Data exploitation by end-users that have little or no big data analytics experience.
Concrete activities During 2nd year	I-BiDaaS Dissemination team has initiated discussions between the technical coordinators of both projects to investigate potential collaborative activities in 2020.

8 Dissemination strategy revision

8.1 KPIs revision

Table 11 enlists the KPIs related to the dissemination strategy for I-BiDaaS alongside with the actual achievements as these were measured up to M18 for showcase purposes during the 1st review for the project.

Although KPI-DC1 is almost covered, the project will continue the dissemination efforts to increase the downloads of its material.

With respect to KPI-DC2, I-BiDaaS is delivering a solid publication list, including 2 Journal papers, 11 Conference/Workshop papers, and 2 Conference/Workshop Posters. The detailed list for the 1st year of the project's publications is reported in D7.3 while for the 2nd year, they are enlisted in section 4.2 of this deliverable.

Table 11: I-BiDaaS Dissemination KPIs

DC-KPI	Success Indicator	Actual Achievement
KPI-DC-1	At least 500 downloads for public deliverables, prototypes, promotional material.	783 Direct Downloads
KPI-DC-2	At least 10 publications	3 Journal, 13 Papers, 2 Posters
KPI-DC-3	At least 3 conferences or workshop participations per year.	15 Conferences, 5 Workshops
KPI-DC-4	At least 33% of conference and journal papers have an impact factor or ERA classification.	64%
KPI-DC-5	At least 33% gold open-access journal articles.	33,3%
KPI-DC-6	At least 2 active participations to a standardization body	2
KPI-DC-7	At least 2 standards that are used and improved within I-BiDaaS.	Work in Progress
KPI-DC-8	At least 3 workshops or special events.	3
KPI-DC-9	At least 3 collaborations with projects in H2020	2
KPI-DC-10	At least 4 participations to collaborative initiatives.	2

During the 1st and 2nd year of the project, I-BiDaaS partners attended 15 Conferences & 5 Workshops (KPI-DC3):

- 2018: 6 Conferences & 4 Workshops
- 2019: 9 Conferences & 1 Workshop

For the 1st year, a detailed list of conferences & workshops attended by I-BiDaaS partners can be found at D7.3 while for the 2nd year, the list of the events is included in section 4.3 of the present deliverable.

Surpassing KPI-DC4, so far, we have achieved 64% of the publications to have an impact factor or ERA classification. All journal publications have an impact factor, and 6 conference papers out of 11 publications have ERA classification.

Regarding KPI-DC5, I-BiDaaS consortium has achieved 33,3% gold open access to the journal articles linked to I-BiDaaS scientific results.

Apart from the fact that the I-BiDaaS dissemination team has managed to reach - or surpass - the KPIs that objectives set. The revision of the KPIs indicates that there is room for

improvement mainly in terms of the KPIs with reference to the extroversion of the project and more specifically the collaboration with other projects and stakeholders.

8.2 M18 Review Recommendations

The revision of dissemination KPIs along with the recommendations provided by the EAB members and the EC reviewers has made clear a set of issues that the I-BiDaaS dissemination team is already focusing on improving.

In general, what our revision of the dissemination strategy has shown is that we need to intensify collaboration activities with other projects, and we need to communicate more effectively with better specified targeted groups.

8.2.1 Recommendation 1 – Lessons Learned

One of the recommendations made during the M18 review was the fact that we need to disseminate "lessons learned" provided from the Use Cases.

At the beginning of the project, I-BiDaaS data providers faced a lot of challenges, including, for example, the definition of the level of data availability and data sharing. It is mainly due to the law restrictions that their organisations ought to comply with and also due to the enforcement of GDPR on May 25th, 2018. All the challenges and difficulties that the data providers faced during their experience with I-BiDaaS MVP and prototype platform have provided them with valuable lessons.

As part of future steps and concerning the recommendations made during M18 review, the I-BiDaaS dissemination team has already initiated proper actions to disseminate these valuable lessons learned by the use cases. To this end, dedicated posts will be published to our website followed by the development of a cookbook in PDF form. Moreover, I-BiDaaS partners will be given relative instructions to disseminate lessons learned during their participation in major events.

8.2.2 Recommendation 2: Feedback and take-up from stakeholders.

The EC Reviews acknowledged the efforts of the I-BiDaaS dissemination team concerning INFO DAYS and hackathons organization. Nevertheless, as they pointed, it is not clear what is the feedback and information received from their attendees. To that end, during EBDVF, ENPC implemented a chatbot which allowed to measure the feedback from the visitors, the results have already been added on D6.3.

Additionally, it has been addressed in section 3.4 of this deliverable, that the creation of this chatbot by ENPC will prove valuable for interactive dissemination between I-BiDaaS members and our targeted groups.

Finally, it should be mentioned that feedback already provided has been internally disseminated and is under evaluation from the consortium for future actions.

8.2.3 Recommendation 3: Target groups should be better specified

During the M18 EC review, it was mentioned that the target groups identified from the exploitation plan should be better specified. As addressed in section 6 of this deliverable engagement of SME's communities in I-BiDaaS will aid this aim. For more information regarding the specification of targeted group the reader can refer to D7.6.

8.3 Future Steps

What is expected for the following period is to increase I-BiDaaS activities in expanding our audience and by engaging even more target groups. Given the fact that the prototype of I-BiDaaS is recently released, the consortium will utilize I-BiDaaS dissemination toolkit at its fullest to promote the final product release that is expected by the end of M36. Figure 19 below depicts a glance of the future steps regarding the dissemination activities for I-BiDaaS in 2020.

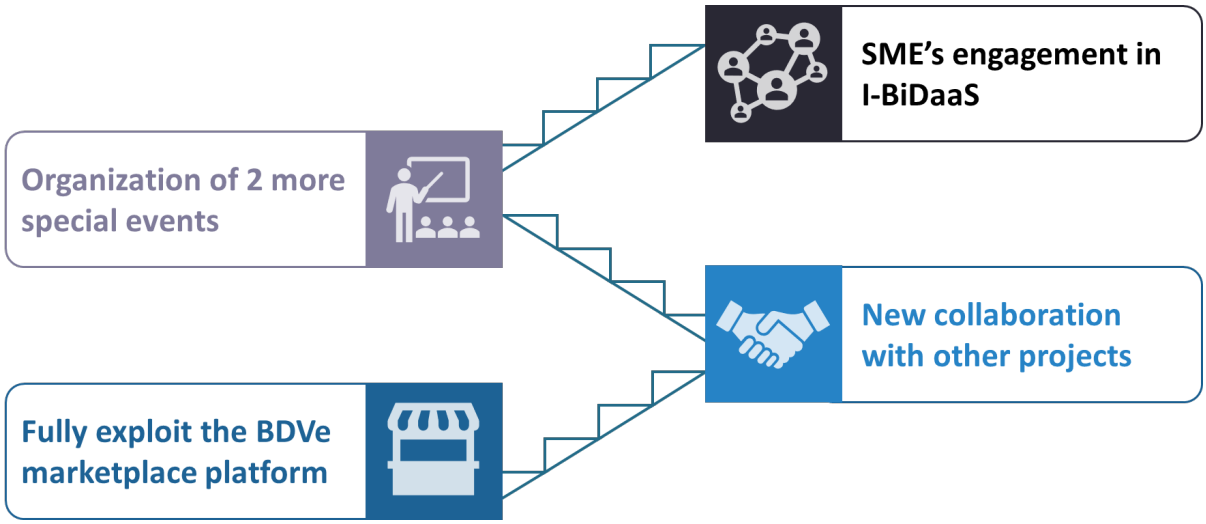


Figure 18. Dissemination future steps in a glance