

DIGILOGIC

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D5.3 First Impact Creation and Assessment Report

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Abstract	DIGILOGIC is on a good way. All deliverables have been submitted on time, and most of the Key Performance Indicators (KPI) have either been achieved or even been overachieved. The overall satisfaction with DIGILOGIC among project partners is high. One major asset is the diversity of stakeholders within the consortium. Now that the project partners have cooperated for 1,5 years already, they know each other's capacities as well as strengths and weaknesses and can make full use of the diversity represented in the group. Yet, there are some points of improvement, for example, the mode of cooperation (online/in person), which is recommended to improve.
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NATURE OF THE DELIVERABLE		R*
DISSEMINATION LEVEL		
PU	Public, fully open, e.g. web	x
CL	Classified, information as referred to in Commission Decision 2001/844/EC	
CO	Confidential to DIGILOGIC project and Commission Services	

* R: Document, report (excluding the periodic and final reports)

DEM: Demonstrator, pilot, prototype, plan designs

DEC: Websites, patents filing, press & media actions, videos, etc.

OTHER: Software, technical diagram, etc.

EXECUTIVE SUMMARY

DIGILOGIC is a **PAN EU-Africa network of Digital Innovation Hubs**, funded by the European Commission under the Horizon 2020 programme. Eighteen months into the project, this first impact creation and assessment report takes stock of DIGILOGIC's achievements up to this point and provides conclusions and recommendations to the project partners for implementation in the remaining 18 months.

- In terms of **building an EU-African network** (objective 1), the project has succeeded in bringing together a set of seven quite diverse organisations whose individual strengths, in sum, are counterbalancing individual weaknesses. The consortium members are surrounded by key ecosystem stakeholders who support the project through engagement in one of two boards.
- **Capacity development of the DIHs** and beyond are central to objective 2: The project aims at strengthening DIH technology transfer capabilities and advancing African innovators. To these ends, it has implemented internal peer learning activities, set up a virtual e-learning platform and is launching a programme for start-ups, entrepreneurs etc.
- **Capacity development of African youth** lies at the heart of objective 3. The respective programme has been kicked off in parallel to writing this report, so it would be premature to make any statements about its outcomes.
- Objective 4, **demonstrating market relevance and value creation** in different use cases, is addressed through an action research approach involving a one-year support programme for start-ups ("challenges") and through a series of capacity building activities ("mentoring").
- To address **post-project sustainability and growth** (objective 5), the project is engaging key ecosystem stakeholders, i.e. in one of the two boards. These stakeholders have become reliable partners, which is an important prerequisite for sustainability.

In conclusion, **DIGILOGIC is on a good way**. All deliverables have been submitted on time, and most of the KPIs have either been achieved or even been overachieved at the time of writing this report. The overall satisfaction with DIGILOGIC among project partners is high. One major asset is the diversity of stakeholders within the consortium. Now that the project partners have cooperated for 1,5 years already, they know each other's capacities as well as strengths and weaknesses and can make full use of the diversity represented in the group.

Recommendation 1: To overcome the perceived challenges of working remotely, we recommend that the consortium identifies opportunities for the project partners to meet in person.

Recommendation 2: The consortium members should critically assess whether the upcoming first in-person meeting in September can be taken as a chance to facilitate further personal exchange.

Recommendation 3: Monthly consortium meetings already include an element of reflection on "anecdotal impact" on three different levels for each project partner. The consortium members should make a commitment to using it in a more consistent way.

Recommendation 4: In order to sharpen the impact-oriented approach of DIGILOGIC, the project should make an effort and brainstorm how the activities for each of its different target groups can be focused even further to address the leverage points that were identified in the map of the ecosystem (deliverable D1.2).

Recommendation 5: Collaboration should not be regarded as purely task-centric. The DIGILOGIC team culture can be enhanced further by incentivising collaboration.

Recommendation 6: The African DIHs should take stock of their capacities with regard to expertise in smart logistics and, based on that stock-taking, develop ideas for follow-up activities to address these challenges.

Recommendation 7: In order to not overwhelm the programming, the respective project partner should prioritise aspects of platform development. Not everything can be realised at once, and not everything is equally important.

Recommendation 8: User experience should be the first priority for platform development. The respective consortium partner should continue to think about how the platform can be made more attractive not only for learners but also for experts (such as consortium partners) who are providing content.

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ABBREVIATIONS

AIT	Active Inference Theory
DIH	Digital Innovation Hub
HLAB	High Level Advisory Board
IIB	Impact and Innovation Board
IP	Internet protocol
KPI	Key Performance Indicator
WP	Work package
TCP	Transmission Control Protocol

1. INTRODUCTION

In January 2021, five Digital Innovation Hubs and two support organisations both in Africa and in the EU set out to address smart solutions in the logistics sector and to build bridges between the two continents under the Horizon 2020 programme. This report takes stock of the project's outcomes 18 months after its initiation and provides some recommendations for the remaining 18 months.

Chapter 1, the introduction, gives an overview of the logistics sector with a focus on Africa, over the overall setup of DIGILOGIC and over the setup for this report. In Chapter 2, the methodological approach of the evaluation is explained in detail. Chapter 3 comprises findings structured according to the five objectives of DIGILOGIC. Conclusions and recommendations as presented in chapter 4. The appendix (chapter 5) includes more information on the sources used to compile this report.

1.1. THE CHALLENGE: DIGITAL TRANSFORMATION IN THE AFRICAN LOGISTICS SECTOR

The state of physical infrastructure remains relatively weak in Sub-Saharan Africa, where 420 million people still live more than 2km away from a useable road. Despite the improving status quo of mobile phone coverage, the state of digital infrastructure paints a different picture where nearly 300 million African people live more than 50km away from fibre or cable broadband¹.

The logistics landscape is also characterised by the limited access to financing for smaller players who struggle to enter the space and introduce more contextualised innovation. Loans and working capital, especially for startups and small and medium-sized companies, are costly and difficult to access. The collateral and guarantee required to surpass what a small entity can cover. Accessing bank loans is nearly impossible for informal SMEs. Access to funding remains the greatest challenge for smart logistics startups. In 2019, only 40% of African smart logistics startups had raised either a seed or Series A round².

Additionally, logistics (movement of goods) is closely intertwined with mobility (movement of people) in Sub-Saharan Africa. Therefore, concerns about safety and security prevail. Policymakers regulating the logistics and transport space face considerable pressure from the burden of blame if logistics operations have led to poor outcomes or accidents. This fact is illustrated by the recurrent bans on motorcycles in large cities, which are "intended to make commuting safer", according to The Economist³ but put at risk many last-mile delivery services. In such a context, regulators and policymakers exhibit risk-averse behaviours that prevent implementing a conducive environment for introducing innovative solutions.

Security issues in Africa affect logistics negatively. Lack of standardisation and adequate implementation leads to unsafe roads. Carrying cash or valuable freight is considered unsafe as vehicle hijacking and robbery incidents are common for truck drivers, particularly after dark. South Africa suffers from such criminal activities and is estimated to have annual damage of 10 billion Rand. Over the past ten years, the freight industry in South Africa has reported over 11,122 heists to the police⁴.

From these various challenges, the reliability of delivery is impeded and, with it, trust among actors across the logistics value chain. This generalised lack of trust is reinforced by the sector's prevailing informal nature, preventing transparent oversight of operations. Furthermore, small actors have a limited track record themselves

¹ OECD/ACET (2020), *Quality Infrastructure in 21st Century Africa* <https://www.oecd.org/dev/Africa-Quality-infrastructure-21st-century.pdf>

² Briter Bridges (2019), *Digitising Logistics in Africa*, Briter Bridges (2019) <https://briterbridges.com/s/20092019-Digitising-Logistics-in-Africa-Report-rjgs.pdf>

³ The Economist (2020), A ban on motorcycle taxis is causing chaos in Lagos <https://www.economist.com/middle-east-and-africa/2020/03/12/a-ban-on-motorcycle-taxis-is-causing-chaos-in-lagos>

⁴ Business Insider South Africa (2020), *90% of all truck hijackings involve criminals who have inside knowledge* <https://www.businessinsider.co.za/truck-hijackings-violence-criminals-heists-2020-2>

and limited capacity to conduct in-depth checks regarding partners' trustworthiness⁵. Additionally, no certificate or standards exist with regard to quality control.

On the environmental side of logistics, although transport-related pollution remains small in Africa in comparison to other continents, the question of air pollution has become sizeable with the growing presence of imported vehicles. Between 2015 and 2018, 40 % of globally exported used light-duty vehicles were heading to Africa. The majority of these used vehicles used in Africa does not meet minimum air pollution standards and are often unsafe to drive. A 2019 study from the Netherlands showed that "more than 80 % of the vehicles exported to Africa were below Euro 4 standard, and most of the vehicles did not have valid roadworthy certificates"⁶.

1.2. DIGILOGIC: A NETWORK BETWEEN EUROPEAN AND AFRICAN DIGITAL INNOVATION HUBS

The work of DIGILOGIC is organised along **six different work packages**, including tasks and deliverables. Figure 1 shows how the work packages and respective tasks are intended to inform and build on each other. While not every task includes a deliverable, all deliverables are assigned to a specific task.

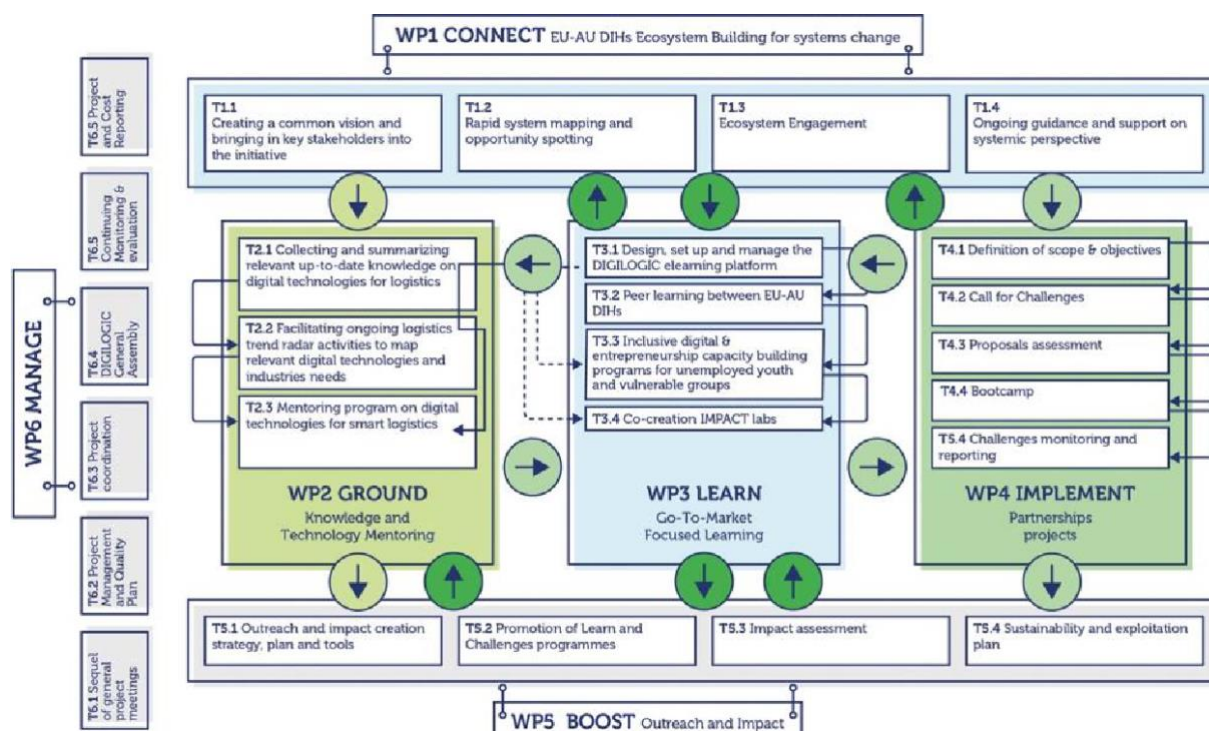


FIGURE 1: DIGILOGICS WORK PACKAGES ARE IMPLEMENTED IN VARIOUS TASKS THAT ARE BUILDING ON EACH OTHER (ILLUSTRATION FROM D6.1)

DIGILOGIC has also defined **five objectives** that are described in detail in the monitoring and evaluation framework (deliverable D5.2). The framework (representing one part of KPI1, which was fully met) defines key tasks for each objective that are crucial to their realisation (see Table 1). Tasks from work package six are not

⁵ GDC (2019), *Last Mile Distribution: State of the Sector*

https://infohub.practicalaction.org/bitstream/handle/11283/622044/GDC_web%20PDF_updated.pdf?sequence=8

⁶ UNEP (2020), *Used vehicles and the environment : A Global Overview of Used Light Duty Vehicles*

<https://wedocs.unep.org/bitstream/handle/20.500.11822/34175/UVE.pdf?sequence=1&isAllowed=y>

assigned to an objective because they are related to project management and therefore support all the other work packages in reaching their respective goals.

TABLE 1: THE TASKS OF DIGILOGIC ARE ASSIGNED TO THE FIVE OBJECTIVES

Objective	Contributing tasks
Objective 1: To build bridges between islands of innovation between and within EU and Africa: establish a Pan EU-Africa network of initially 5 DIHs focused on the topic of smart logistics and achieve seamless collaboration between the hubs and their pool of emerging technology innovators.	<ul style="list-style-type: none"> ● Task 1.1. Creating a common vision and bringing key stakeholders into the initiative ● Task 1.2. Rapid system mapping and opportunity spotting ● Task 1.3. Ecosystem engagement
Objective 2: To strengthen the DIHs' technology transfer capabilities to advance African innovators and ICT professionals for better job opportunities.	<ul style="list-style-type: none"> ● Task 3.1.: Design, set up and manage the DIGILOGIC eLearning platform ● Task 3.2.: Peer learning between EU-AU DIHs ● Task 3.4.: Co-creation IMPACT labs
Objective 3: To empower African youth, especially women and vulnerable groups, with entrepreneurial and digital literacy skills to significantly increase good quality employment opportunities, including self-employment.	<ul style="list-style-type: none"> ● Task 3.3.: Inclusive digital & entrepreneurship capacity building programs for unemployed youth and vulnerable groups / Virtual Job Fair (VJF)
Objective 4: To demonstrate the market relevance of the DIGILOGIC network of DIHs, engaging at least 200 EU-AU innovators in the call for Challenges, to participate in collaborative projects, and value creation in different use cases suggested by stakeholders' needs.	<ul style="list-style-type: none"> ● Task 2.3.: Mentoring Programme on digital technologies for smart logistics ● Task 4.1.: Definition of scope and objectives ● Task 4.2.: Call for Challenges ● Task 4.3.: Proposals Assessment ● Task 4.4.: Bootcamp ● Task 4.5.: Challenges Monitoring and Reporting
Objective 5: To ensure post-project sustainability and growth of the DIGILOGIC ecosystem	<ul style="list-style-type: none"> ● Task 1.3. Ecosystem engagement ● Task 5.4. Sustainability and exploitation plan

The tasks and activities of DIGILOGIC address **three different layers of stakeholder groups**. As is shown in Figure 2, at the core, there is the DIGILOGIC consortium itself: Seven organisations based in Africa and the EU who are aiming to build a sustainable network to collaborate on solutions for smart logistics. The activities of the first year in DIGILOGIC have been focused on this inner core of DIGILOGIC for good reasons: The consortium assumes that firm relationships, especially between the five DIHs, are a necessary precondition for capacity development through exchange and transparency. However, DIGILOGIC has also broadened its perspective by analysing the smart logistics ecosystem and reaching out to key stakeholders.⁷ These organisations, companies, academia etc., form the second layer of DIGILOGIC stakeholder groups that surrounds the consortium at its core. They are crucial multipliers for the knowledge that is generated by DIGILOGIC, and they are supposed to become important nodes in the DIGILOGIC hub to spread information within their own networks. Stakeholders in this layer are represented in the two DIGILOGIC boards (see subsection 3.1.2); to some extent, they are also intended to give input to some of the activities for stakeholders at the third level. At the third level, there are the target groups of DIGILOGIC's activities that are all going to be implemented in the second half of the project. Unlike the stakeholders on the second level, who are seen as experts and who represent larger organisations, stakeholders on the third level are rather learners, and they tend to come as individuals or in the representation of small companies and startups.

The three different layers of DIGILOGIC are not fixed. There may be cases in which a stakeholder represents a company but still rather approaches DIGILOGIC as a learner, i.e. being a participant in the co-creation labs. There may also be cases in which innovators from the third layer assume an expert role in the process.

⁷ See DIGILOGICs „Ecosystem Map“ (deliverable D1.2, pp.12-15) for a comprehensive analysis of ecosystem stakeholders for smart logistics in Africa.

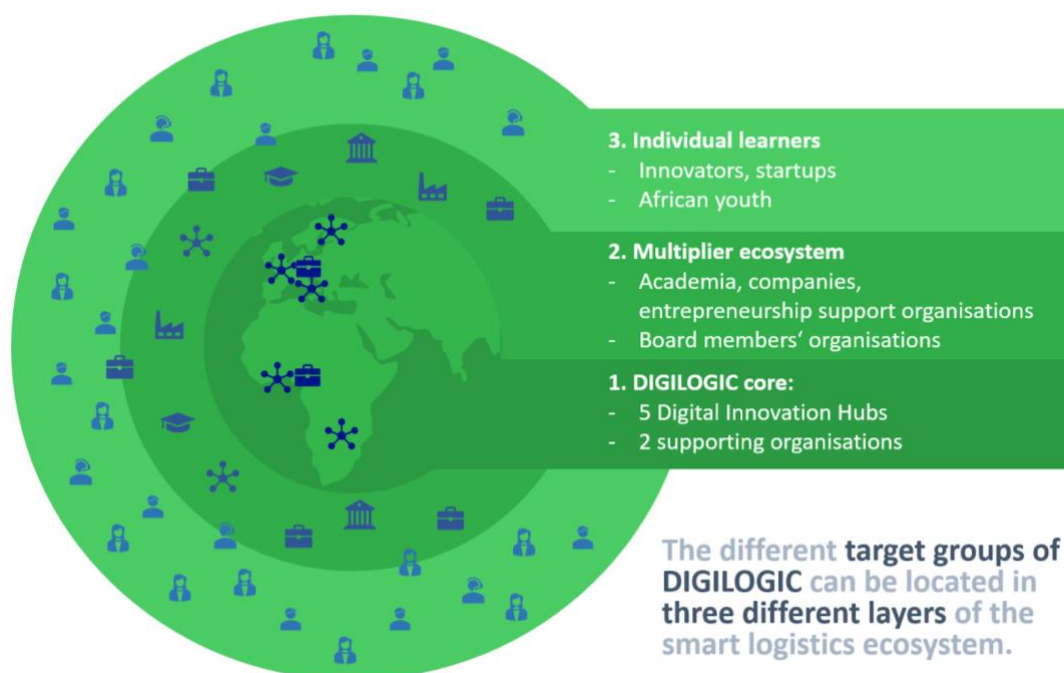


FIGURE 2: DIGILOGIC TARGET GROUPS IN THREE DIFFERENT LAYERS

1.3. ON THE FIRST IMPACT CREATION AND ASSESSMENT REPORT

This report contains, as per the grant agreement, information on "the impact creation activities of the project, covering work done in each reporting period" (Grant Agreement p. 28). It is regarded not only as a stock-taking exercise but also as an opportunity for the consortium partners to critically reflect on what has been achieved so far and how strategies and operations may be adapted for the remainder of the project.

The report is written by a consultant in close cooperation with Endeava, the consortium member that is responsible for coordinating and, in part, implementing M&E-related activities. Much of the evaluation approach builds on an M&E framework that was designed by Endeava in 2021.

2. METHODOLOGY

The general approach of DIGILOGIC to monitoring and evaluation is described in detail in deliverable D5.2, the "Impact Methodological Framework", which was finalised in August 2021. The framework was revised slightly in the process of conducting this mid-term assessment to do justice to small changes in the project setup. This section explains how this evaluation was conducted; more general information can be found in D5.2.

2.1. SOURCES OF DATA COLLECTION

Two different sources were used to generate **primary data**.

First, the evaluator conducted **guided interviews with the consortium and board members**. The guided interviews were implemented to generate and record individual reflections on the experience, success and potential problems of the interview partners' respective tasks and work packages (WP), but also DIGILOGIC as a whole. Interviews were based on an interview guideline that is presented in annex 5.3. For each interview partner, the guideline was adapted slightly. The response rate of consortium members was excellent: Each consortium member of DIGILOGIC willingly also took part in an interview (100%). Among board members, out of four who were contacted, two agreed to take part, but in the end, only one interview with a board member could be realised due to severe time restraints on the side of board members. In sum, nine consortium representatives and one board member took part in interviews that lasted between 30 and 70 minutes.

Second, in addition to the guided interviews, both consortium members and board members were invited to take part in a **Social Network Survey** (see questionnaire in annex, section 0) that was implemented using the online tool SurveyMonkey⁸. The survey was supposed to give more insights into the relationships that are developing in and around DIGILOGIC as a major outcome of the project. It will be repeated for the final evaluation of DIGILOGIC so that changes in the network are documented appropriately. The response rate for the survey among consortium members again was excellent: all consortium members were represented in the survey. For the board members, similar to the experience with the guided interviews, the response rate was low. After consultation with project representatives, the evaluator decided to exclude responses from board members in order to avoid bias in the results.

In addition to the data that was collected exclusively for the report, the evaluator used **three further data sources for secondary analysis**: Programme documents and KPI data, as well as survey data for the peer learning activities (T3.2). Since the implementation of DIGILOGIC started about 18 months ago at the time of writing this report, a great number of documents is now available that reflect not only the planning and theoretical side but also how it has been put into practice so far. This includes the deliverables but also working documents such as meeting protocols and internal feedback data on a peer learning exercise (see annex 0 for a list of documents). The KPI, data for which is being collected by consortium members, each allow a very focused view of specific aspects of DIGILOGIC. They are listed in the appendix (section 0) and referred to throughout the report.

2.2. DATA ANALYSIS

Interview data were prepared for analysis by turning recordings into written text using two different techniques: Manual **transcription** by the evaluator and, to increase efficiency, an automated transcription service⁹. The transcripts that were generated by AI were proofread once by the evaluator.

⁸ See <https://www.surveymonkey.com/>

⁹ The evaluator used f4x (<https://www.audiotranskription.de/f4x/>), an automated transcription service that supports both German and English language and that complies with European data security laws. See <https://www.audiotranskription.de/sicherheit/> for more detail on how data security is secured by f4x.

Interpretative analysis was conducted using **computer-assisted qualitative data analysis software MaxQDA**. Based on the M&E framework (D5.2), the evaluator created a deductive code system with the objectives being the main categories. The code system was heavily redacted in the course of analysis by adding inductive codes, as can be seen in annex 1.1. This two-fold approach allows for alignment with the evaluation questions and the structure of this report while at the same time remaining flexible enough for relevant findings that emerge from the empirical data.

Results of the social network survey were analysed using both Excel and an open-source network analysis software called "Social Network Visualizer".

2.3. LIMITATIONS OF THE EVALUATION

This evaluation has two major limitations.

First, it **only includes one external voice**, while all the other information comes from within the project. In part, the evaluation approach was designed that way to reflect the overall timing of DIGILOGIC. Up to the time of writing this report, DIGILOGIC has been, for the most part, focusing on internal capacity development and networking (the core of DIGILOGIC). Only by including two advisory boards the consortium members have started to engage stakeholders beyond their own organisations in a systematic and continuous way (second layer of DIGILOGIC). However, the focus on internal data should have been expanded by at least including voices from the close surroundings of DIGILOGIC: Its board members. Initial plans to conduct focus group discussions with the boards were dropped since they could not be added to the regular board meetings and, therefore, would have been too much to ask from the high-profile board members. It was then decided to at least include them in the social network survey and in bilateral interviews. The response rate for both was so low that in the end, the evaluator and representatives of the consortium decided to drop the board members' data in the survey entirely to avoid bias, and only one interview with a board member could be accomplished.

The second limitation of this evaluation is that it **does not come at an ideal time**. After a long period of internal capacity development and conceptual work, DIGILOGIC gained traction in early 2022. The majority of consortium members are currently focusing on preparing activities and deliverables that are all due in parallel to this report. Those deliverables, as well as the activities, can hardly be discussed in this report. When the consortium made the schedule for M&E activities, it was not clear that the timing would be rather unfavourable.

3. FINDINGS

This chapter includes findings on the evaluation questions, while conclusions and recommendations are to be found in the following chapter 4. The findings chapter is structured along the five objectives of DIGILOGIC. For each of the objectives, the sections include information on the activities and outcome level.

3.1. OBJECTIVE 1: BUILDING AN EU-AFRICAN NETWORK

Objective 1 lies the foundation for all the other objectives of DIGILOGIC: Building a network between the consortium members and other stakeholders is a prerequisite not only for the implementation of all activities but also for tapping their full potential in terms of outcomes/impact and, ultimately, sustainability. Even though the three related project tasks all fall in WP1 (see Table 2), all joint activities and communication between members of the network in any of the other WP will contribute to "building bridges", as is termed in objective 1.

To cover all evaluation questions regarding objective 1, this section includes, unlike the following sections, **three different subsections**. The first one is unique in that it analyses the most valuable resource that DIGILOGIC builds on: The consortium partners at the core of the hub (subsection 3.1.1). The subsequent subsection then looks at activities/outputs in terms of the three tasks of WP1 that are related to objective one (subsection 3.1.2). The final subsection takes a broader perspective on DIGILOGIC in its entirety to assess the outcomes up to date regarding objective 1 (subsection 3.1.3).

One evaluation question is marked grey, indicating that it cannot be answered at the time of writing this report because the respective activities have not been implemented yet.

TABLE 2: PROJECT TASKS AND EVALUATION QUESTIONS FOR OBJECTIVE 1

To build bridges between islands of innovation between and within EU and Africa: establish a Pan EU-Africa network of initially 5 DIHs focused on the topic of smart logistics and achieve seamless collaboration between the hubs and their pool of emerging technology innovators.	
Key project tasks involved	<ul style="list-style-type: none"> ● Task 1.1. Creating a common vision and bringing key stakeholders into the initiative ● Task 1.2. Rapid system mapping and opportunity spotting ● Task 1.3. Ecosystem engagement
Evaluation questions	<ul style="list-style-type: none"> ○ What is the level of satisfaction of key ecosystem stakeholders engaged in the DIGILOGIC network? ○ What is the level of satisfaction of participants of DIGILOGIC's Ground, Learn, and Implementation programmes?* ○ What is the composition of the DIGILOGIC network? ○ Are key stakeholders engaged that are decisive in reaching DIGILOGIC's vision? ○ How does the composition change over time? ○ Did DIGILOGIC contribute to transparency in the network? ○ Are there any professional and/or organisational changes within the key ecosystem stakeholders engaged? ○ What is the depth of relationship and collaboration within the network? ○ Which ties between actors were established? ○ Are there actors in the network that function as key coordinators? ○ Are there weaknesses in the network? ○ How does that change over time?

3.1.1. Input: The consortium members

The **DIGILOGIC network's core** consists of seven consortium members. Five out of seven members are Digital Innovation Hubs, while the other two do not fall in this category: Reflecting their organisational strengths, they fulfil a supporting role by providing a systems perspective (Endeva) and an SME/business perspective (Prototipi). Two Digital Innovation Hubs are located in Africa; three are in Europe. While two of the three EU-based DIHs have a track record in working on smart logistics, there is no such specialisation on the African side. As several interview partners confirm, the situation within DIGILOGIC mirrors the situation in more general terms: There is a lack of capacities with regard to smart logistics in Africa; in particular, there simply are no DIHs that focus on this issue in a way that is comparable to the European DIHs with this specialisation.

The **lack of specialisation on the African side** is perceived as a limitation by most interview partners. Two interview partners point out that due to the composition of its members, the approach to smart logistics within DIGILOGIC risks being Eurocentric. The consortium tries to overcome this limitation by including a great number of external African stakeholders from academia and from the business world in the various programmes it offers (challenges, mentoring, co-creation labs, capacity building).

Looking at it from the opposite angle, the **expertise and knowledge with regard to smart logistics on the side of the EU-based partners** are perceived as highly valuable. When talking about their motivation to participate in DIGILOGIC during the bilateral interviews, all interview partners representing African organisations stressed that collaboration is a unique learning opportunity for them. They expect not only to broaden their own knowledge but also to be enabled to provide better services for their respective target groups, such as innovators and youth.

One crucial feature of the African partners that was mentioned frequently by the EU-based organisations in the bilateral interviews is their **"knowing the situation on the ground"**, as one interview partner put it. This not only refers to knowing country-specific challenges with regard to business development and entrepreneurship in general but also to know the needs and interests of DIGILOGIC's target groups in the partner countries. Further, as will be discussed in subsection 3.1.2, the African consortium members have been crucial in developing a network around DIGILOGIC of organisations that are based in Africa. They are all well established in the ecosystem and serve as multipliers for the project.

3.1.2. Activities and output level

Task 1.1 was implemented during the first months of DIGILOGIC. The correspondent deliverable (**D1.1**, Vision and list of stakeholders) defines a **common vision that is supposed to guide all activities** of the consortium. It builds on extensive desk research and 50 interviews with stakeholders that have different backgrounds in academia, government, industry, logistics and commerce, both from African and European countries. The KPI of interviewing 25 stakeholders was not only met but exceeded by a factor of 2.

The deliverable identifies critical mile logistics as the focus area which supposedly holds the greatest potential for impact and innovation in the logistics field. The corresponding main statement ("guiding star") is:

"Innovation makes critical mile logistics more efficient, affordable, inclusive and sustainable in Africa, through the facilitation of Digital Innovations Hubs."

In addition to the vision as defined in D1.1, DIGILOGIC drew a **map of the logistics and transportation sector in Africa** to improve the common understanding of critical mile logistics and identify the most promising and actionable parts of the system. Results are presented in D1.2, Mapping of System and Video Narrative. The video narrative has reached 274 views on YouTube by the end of May 2022 (see Figure 3).



FIGURE 3: THE VIDEO NARRATION BRIEF ON LEVERS OF CHANGE ON YOUTUBE HAS REACHED 274 VIEWS BY MAY 2022

The goal of **bringing in key stakeholders** is taken up in task 1.3 ("Ecosystem engagement") by inviting key actors, some of which have been identified in task 1.1, to be part of either the High Level Advisory Board (HLAB) or the Impact and Innovation Board (IIB). This corresponds to KPI3 ("Identify partners and key stakeholders outside consortium"), which was met as planned. In total, the HLAB is staffed with ten members and the IIB with six members. Consortium members who have been interviewed for this report point out that it has been difficult to fully exploit the potential of board members since the four main capacity building activities for individual learners (Mentoring Programme, Capacity Development, Co-creation Impact Labs and Challenges) are just about to commence in the second half of DIGILOGIC. Section 3.5 provides a more detailed description of the boards and the role they are playing.

In addition to engaging stakeholders in the boards, the consortium has **reached out to experts and insiders** for its **Trend Radar**. The Trend Radar is being published as an asset in M30 and is based on a series of interviews on digital solutions in logistics which have been conducted with on-the-ground-experts in Africa since January 2022. The interviews are now being published in the format of podcasts on the community platform.

Following the idea of widening the DIGILOGIC network, **consortium members are actively reaching out to stakeholders beyond the consortium and beyond the boards** to some extent. The project's monthly meeting protocols, for instance, show nine pieces of documented outreach in order to secure the engagement of "outside stakeholders".¹⁰

Outreach beyond the DIGILOGIC network, however, has been somewhat **limited in the first 18 months due to the timing of activities**. The argument is the same as it was for engaging board members: All four capacity building interventions that allow for more specific inclusion of ecosystem stakeholders, for example, as mentors, experts, reviewers etc., are just about to commence at the time of writing this report.

3.1.3. Outcomes level

The **network between consortium partners has evolved dramatically** during the implementation of DIGILOGIC. Prior to DIGILOGIC, the consortium partners had only a few interconnections with each other. As **Error! Reference source not found.** shows, there were some relationships between some of the organisations, but only

¹⁰ The "anecdotal evidence" data from project meeting protocols does not seem to be comprehensive since only 3 out of 5 relevant work packages report on outreach. It seems that not all consortium members are routinely using the format to report on their activities during project meetings. Insights from bilateral interviews indicates that outreach is rather underreported.

two of them had linkages with more than two others (DHM and MEST). There were some connections between African partners (encoded as red nodes) and those who are based in the European Union (encoded as green nodes). Eighteen months later, all consortium partners are connected with each other. This does not come as a surprise since the project design features countless interlinkages, for example, through collaboration or peer review in its various tasks. There is some anecdotal evidence supporting the claim that transparency has increased within the network and beyond. For instance, interview partners confirm that they have all contributed very openly to the design options paper (deliverable D3.2), which summarises best practices of DIHs with regard to inclusive digital entrepreneurship capacity building. Also, a monitoring tool for startups that was developed within DIGILOGIC by one of the consortium partners was shared freely and is now being used by another DIH in a training programme outside of DIGILOGIC (the UNICEF startup lab by MEST in Ghana).

Two organisations are not as closely connected to the others 18 months into the project: The Fraunhofer Institute and VTT. This finding is partially supported by the bilateral interviews in which interview partners pointed out that their connections with both Fraunhofer and VTT are more limited compared to other connections within DIGILOGIC. However, this is within the context stated above in the preceding paragraph of all consortium partners being connected with each other through countless interlinkages. Furthermore, one only has to search online on network diagrams to see that all networks have some nodes that are more closely connected to each other than some other nodes. The particular reasons for network node distributions are network-specific. In this network, one of the consortium partners that is not so closely connected as the most closely connected partners is Fraunhofer. This organization is not a consortium partner on its own but part of the consortium through its subcontract by DHM.¹¹ The outlier status shows that communication with them tends to go through DHM, which is indeed by intention since Fraunhofer is only subcontracted for the facilitation of task 2.3. However, it is important to note that Fraunhofer has participated in all of the necessary meetings, workshops, etc., that were required. In addition, Fraunhofer has participated with the same proactive constructive manner in other meetings, workshops, etc, at which Fraunhofer's valued input was requested. There are two more factors that may explain the status of both VTT and Fraunhofer. First, work packages 4 and 2/6 are set up differently: While within work packages 1, 3 and 5, tasks are split between different consortium partners, tasks in work packages 4 and 2/6 lie exclusively in the hands of the respective leads VTT and DHM/Fraunhofer. Therefore, by design, exchange on these tasks with other consortium members is rather limited, which contains the risk of silo development. Second, the major activities that VTT and Fraunhofer are responsible for are only taking place in the second half of the project, so the outlier status may also reflect the timing of activities. Finally, the work distribution within the organisations in the consortium differs at least between VTT and the other partners, with VTT being the only organisation in which all communication is channelled through one person. Here, it is important to note that having one primary contact can bring valuable advantages. For example, the Project Co-ordinator DHM ranks VTT as being either the second or first fastest partner in speed of response. By contrast, having multiple contacts can lead to some uncertainty about both who to contact and about who should reply when contacted. This uncertainty can, compared to the speed of VTT's responses, lead to some delays. Furthermore, it is important to note that VTT has been a very active in advancing the primary goal of DIGILOGIC: to boost collaboration between African and European DIHs. In particular, VTT has represented the DIGILOGIC consortium at several international development events. Also, VTT moderated the webinar focused on international DIH collaboration. Furthermore, VTT has been most active in establishing connections with grassroots organizations in Africa. VTT has a co-located meeting with organizations' representatives, and is very active in collaboration with the Southern Africa Innovation Collective. In addition, the monitoring tool for startups was developed by VTT through a rigorous process of translating fundamental natural science research about survival in changing environments into an easy-to-use start-up support tool that has already been taken into use inside and outside of the consortium. A bi-product of this work is that VTT has engaged with scientists who can bring new perspectives to the challenges of digital logistics in changing environments. This can be seen, for example, in one of the six news pieces prepared by VTT on the DIGILOGIC website, Future-Proofing Start-ups. In the future, there will be more VTT experts participating in DIGILOGIC. However, much of their input will be focused on one-to-one meetings with the 12 start-up teams: rather than with consortium partners. This is necessary to focus use of the EU tax payers' money on boosting entrepreneurship in Africa. However, this will be

¹¹ Since Fraunhofer is supposed to make significant contributions to DIGILOGIC in terms of technical expertise, the evaluator decided to make them visible in the social network analysis.

within the context stated above in the preceding paragraph of all consortium partners being connected with each other through countless interlinkages.

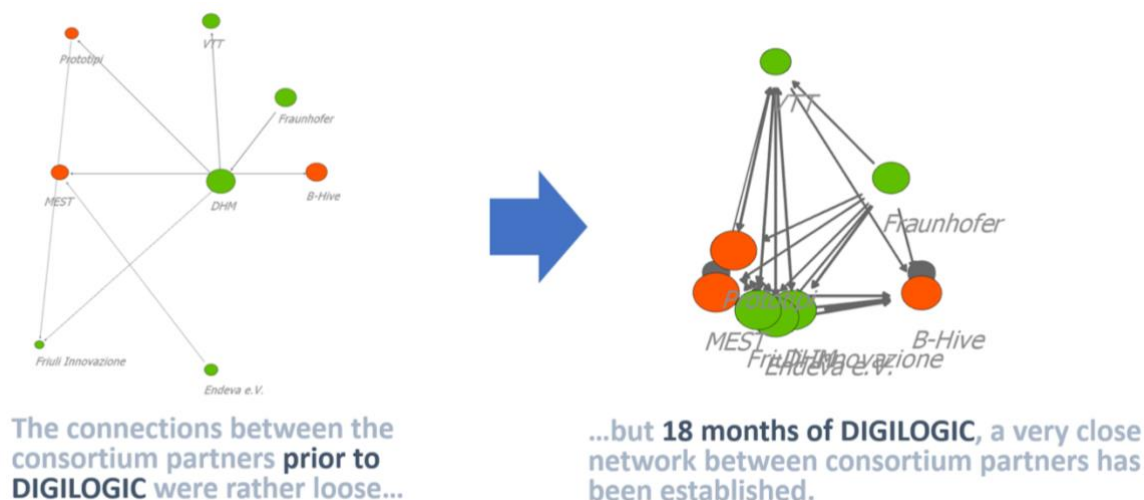


FIGURE 4: DIGILOGIC TARGET GROUPS IN THREE DIFFERENT LAYERS

Widening the network by **engaging stakeholders beyond the consortium has been limited** in the first 18 months of DIGILOGIC because the activities to this point have been focused on the consortium itself (i.e. tasks 1.1, 1.2, but also 2.1). In order to develop trust between the consortium partners and thereby increase transparency in the exchange, these activities could not be opened to "outside stakeholders". Input from stakeholders beyond the consortium was limited to feedback and discussions from and with board members and interviews with further stakeholders for the ecosystem mapping (Deliverable 2.1) and the Trend Radar, as well as interactions with other EU Horizon2020 programmes in a biannual virtual meeting.

However, despite these challenges, the DIGILOGIC **consortium members have started to build a second layer of key ecosystem stakeholders** beyond the inner circle of the consortium members themselves. The stakeholders mentioned here are all members of the HLAB or IIB.¹² Figure 5 displays how the broader network has evolved. Prior to DIGILOGIC, most of the organisations around the consortium members had only one or two connections at most. Eighteen months later, some of those organisations have moved closer to the network's centre since they have developed more connections within the DIGILOGIC consortium.

¹² For the sake of clarity, for this report, we decided to include organisations into this second layer who are represented in the DIGILOGIC boards and potentially will take on other roles (mentoring, counselling etc.) in the upcoming DIGILOGIC activities. To put it differently, we are excluding stakeholders who were taking part in the stakeholder interviews (see 3.1.1) and, obviously, stakeholders who are onboarding at the time of writing this report in order to support the various capacity building offers.

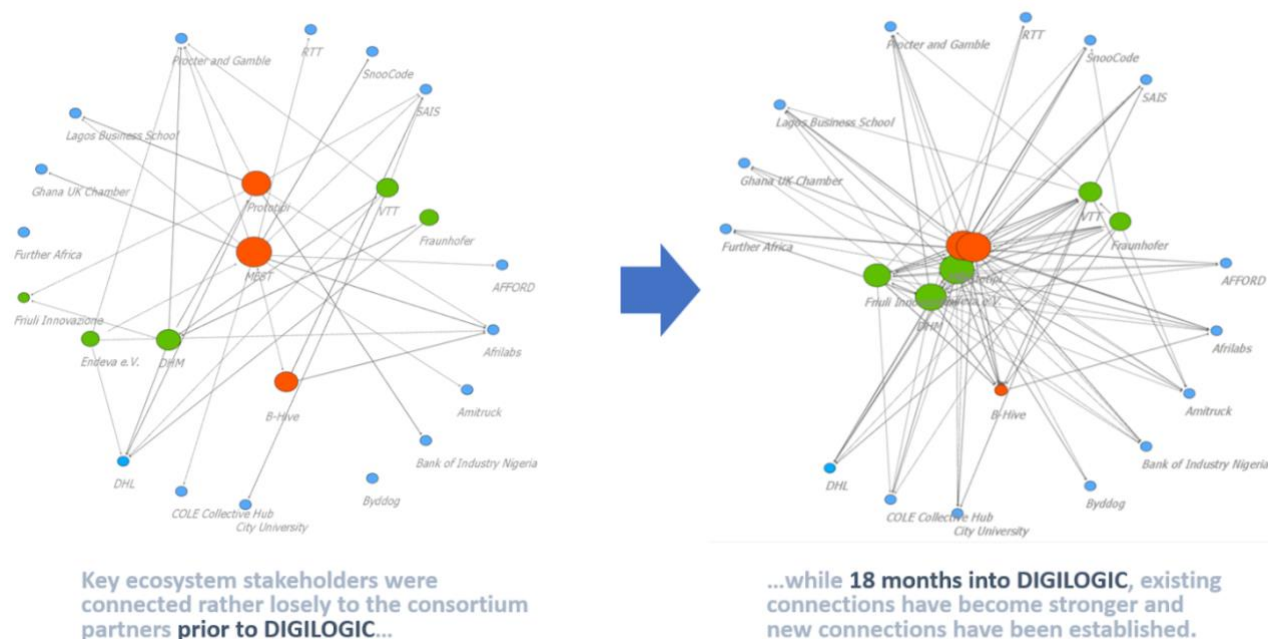


FIGURE 5: AS THE SOCIAL NETWORK ANALYSIS SHOWS, MORE CONNECTIONS TO THE KEY ECOSYSTEM STAKEHOLDERS OUTSIDE OF THE CONSORTIUM ITSELF HAVE BEEN ESTABLISHED 18 MONTHS INTO THE IMPLEMENTATION OF DIGILOGIC

It is expected that the **network**, especially the second layer, will **undergo more changes in the second half of DIGILOGIC** since most of the activities that allow engaging a larger number of ecosystem stakeholders are just about to commence at the time of writing this report. As was mentioned before, the lack of specific expertise on smart solutions for logistics on the African side is to be found here, with the stakeholders surrounding the DIGILOGIC consortium. There is anecdotal evidence that their solutions are of great interest for the EU-based project partners, which may lead the consortium to develop stronger ties also between the continents in the remainder of the project. **Satisfaction with participation in the DIGILOGIC network is high** for the consortium partners. In the social network survey conducted among consortium partners, 6 out of 8 respondents expressed satisfaction and 2 expressed high satisfaction with participating in DIGILOGIC activities so far (see Figure 6). This overall positive perception was also expressed in the bilateral interviews with consortium partners.

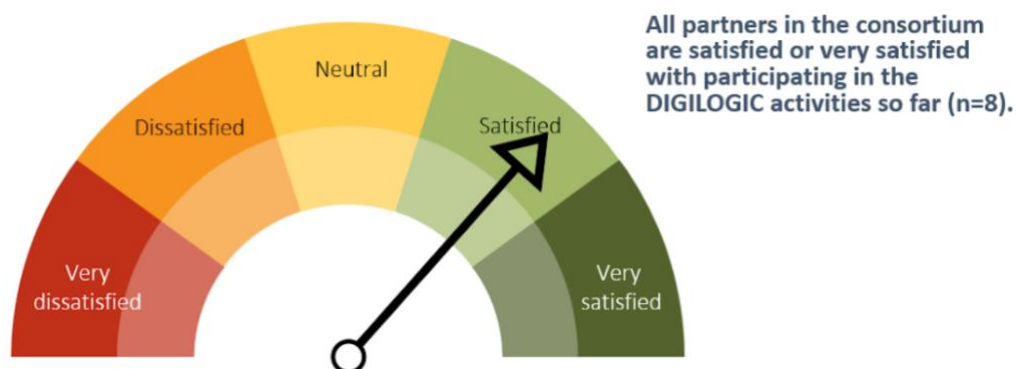


FIGURE 6: RESPONSES IN THE NETWORK SURVEY TO THE QUESTION "OVERALL, HOW SATISFIED OR DISSATISFIED ARE YOU WITH PARTICIPATING IN DIGILOGIC ACTIVITIES SO FAR?"

On the downside, interview partners also mentioned **two major issues** regarding their participation in DIGILOGIC that they are **not satisfied with**: remote work (as a result of COVID) and working in silos.

First, most (not all) interview partners referred to **COVID and remote work as a major obstacle** to the intended bridge-building between African and EU-based hubs. In the words of one interview partner: "(...) this hindered somehow the effectiveness of the work done by the partners because I truly believe that having the chance to meet and to work face-to-face is much more effective than doing it on the screen.". Several interview partners

even state that for them, building a personal relationship is an important precondition for building a professional relationship. In their understanding, a personal connection increases mutual accountability, increases the sustainability of the relationship and enables a more honest approach to critical issues in the collaboration. The negative impact of remote work on the work of the consortium is complicated further by the fact that the cultural backgrounds are different. As one interview partner pointed out, the different backgrounds encompass different ideas about how close a cooperation in a setup like DIGILOGIC should be, about how much needs to be discussed and decided within the consortium and how much lies in the responsibility of one party. Due to the pandemic, one part of KPI7 ("DIHs Peer learning #study visits") could not be met as was intended within the first 1,5 years of the project.

The second issue that came up in several interviews is that due to the project setup and respective division of work (see Section 1.2.1), the work on DIGILOGIC is at least in part perceived as **working in silos**. In other words, some consortium members feel that there should be a broader involvement of a range of consortium members for some of the tasks to avoid duplication of work and coming up with competing offers for the target groups of DIGILOGIC.

3.2. OBJECTIVE 2: STRENGTHENING DIH TECHNOLOGY TRANSFER CAPABILITIES AND ADVANCE AFRICAN INNOVATORS

Objective 2, essentially, describes **two different intended results**: First, strengthening technology transfer capabilities of the hubs that are part of the consortium, and second, advancing African innovators and ICT professionals for better job opportunities. The first one is a goal in itself since increased tech transfer capabilities of both EU and African hubs are a valuable resource not only in order to reach goals on an output and outcome level but also in terms of sustainability. It is closely connected to objective one since the connection of the DIHs with each other is an important precondition for the intended capacity development. The second goal, advancing African innovators, is an intended change at the level of one of the DIGILOGIC's target groups. The increased tech transfer capabilities of the DIGILOGIC DIHs can contribute to this. The respective evaluation questions for objective two, therefore, refer to outcomes at the two different levels of DIHs and innovators (see Table 3). Two evaluation questions are marked grey, indicating that they cannot be answered at the time of writing this report because the respective activities have not been implemented yet.

TABLE 3: PROJECT TASKS AND EVALUATION QUESTIONS FOR OBJECTIVE 2

To strengthen the DIH technology transfer capabilities to advance African innovators and ICT professionals for better job opportunities.	
Key project tasks involved	<ul style="list-style-type: none"> ● Task 3.1.: Design, set up and manage the DIGILOGIC eLearning platform ● Task 3.2.: Peer learning between EU-AU DIHs ● Task 3.4.: Co-creation IMPACT labs
Evaluation questions	<ul style="list-style-type: none"> ○ To what extent were DIGILOGIC activities able to foster a valuable exchange of experience among European and African DIHs? ○ Are there any perceived synergies resulting from this Pan African-EU DIH collaboration? ○ What worked well and why? Which challenges were encountered? ○ Are there any specific conditions critical for benefits and synergies to evolve? ○ Did Learners on the E-Learning Platform use the training courses and resources available? ○ To what extent did DIGILOGIC support the upskilling of African innovators and ICT professionals? ○ To what extent did DIGILOGIC provide networking and business opportunities for innovators and ICT professionals? ○ What worked well and why? Which challenges were encountered?

3.2.1. Activities and output level

Objective 2 includes **three different tasks** that are all implemented in WP3: Creating an eLearning platform, enabling a peer learning exercise between the DIGILOGIC DIHs and implementing co-creation IMPACT labs. While the eLearning platform is up and running at the time of writing this report and the peer learning exercise has already been implemented, the co-creation labs are still being prepared (in accordance with the time plan).

The **eLearning platform** is a crucial element of the DIGILOGICs outreach strategy. It is supposed to **serve different functions** that are described in more detail in D3.1: building the capacities of the platform's users in terms of smart logistics, being a library of resources on smart logistics, building community among its users, facilitating discussion groups and networking, managing the challenges (see section 3.4), and managing the mentorship programme including tech talks (see section 3.4). The platform is accessible to registered users only (see Figure 7). In late June 2022, the platform had 809 registered members. KPI20 ("Participants to the eLearning platform") was aiming for 500 participants at this point in time, so the platform has started off in a promising way.

Departing from the initial plan, the platform was not built as a Moodle platform but as a stand-alone platform using WordPress as a base. The decision to **build the platform from scratch** was informed by the limitations of Moodle. It was argued that an original platform would be more able to serve all the different needs and fulfil the different functions that are described above, particularly facilitating community building and networking for its users. In more technical terms, including plugins and integrations for virtual meetings, for networking and chatting bilaterally and in groups, but also for receiving and managing applications would have exceeded what Moodle (being a sole eLearning platform) has to offer.

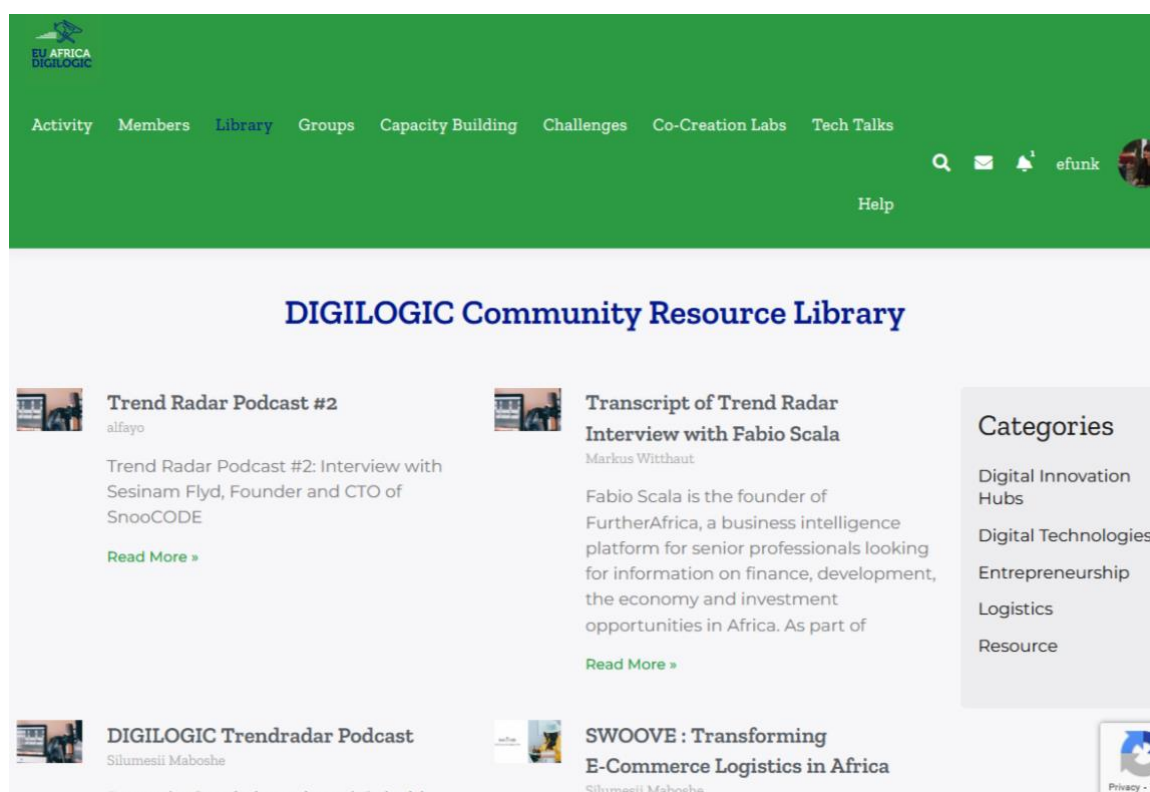


FIGURE 7: VIEW OF THE RESOURCES LIBRARY ON THE DIGILOGIC PLATFORM (FOR LOGGED IN USERS ONLY)

However, building the platform from scratch **came with a price**. Some interview partners expressed discontent with the pace of creating the platform and communication during platform creation, technical issues and with the usability of the platform. While it goes beyond the scope of this evaluation to assess the process of programming the platform and technical issues, the question of usability is more relevant. In interviews with the consortium partners, it was mentioned that the platform does not yet adequately engage users and that even members of the consortium themselves don't feel incentivised in a sufficient way to log in and use the platform

regularly. In particular, communication through the platform was reported to be not efficient since it is not yet harmonised with other channels of communication that are far more prevalent within the target group.

The mentioned **shortcomings** of the platform, however, **need to be analysed with great caution**. Even though the platform was launched in 06/2021, it only became a focus in the spring of 2022, when for example, the tech talks and the call for applications for the challenges were facilitated on the platform. It is not unusual for new services to undergo significant development when they are first introduced to target groups. Also, since crucial project elements for the target groups which are linked to the platform in many ways (capacity development, co-creation labs, mentoring and the challenges) have only started or are just about to start, it can be expected that there will be more incentives to use the platform in a meaningful way for the remainder of the project.

The second task that is supposed to contribute to both increased technology transfer capabilities and advancing African innovators are the **peer learning activities**. The peer learning activities were a series of exchanges for the consortium members that took place between September 2021 and December 2021. Four plenary peer learning workshops and ten bilateral twinning sessions were realised and attended by at least one representative of each consortium member.

The overall **satisfaction with peer learning activities among consortium members was high**. Out of the 17 respondents of the peer learning survey, 15 reported that for them, the overall benefit of such an exchange between DIHs is high or very high (see Figure 8). This satisfaction was also expressed in the bilateral interviews. One interview partner described how "each partner (...) finally realised what each of them was doing, which came to a big surprise cause a lot of people did not attempt to understand what everybody else was doing". Getting to know each other in more detail was important given that relationships between most of the consortium partners prior to DIGILOGIC had been sparse (see section 3.1.2) and that "DIH" is a broad category including very heterogeneous types of organisations. As another interview partner pointed out, the exchange finally allowed the participants to realise each other's strengths – knowledge that can make collaboration easier for the remainder of the project.

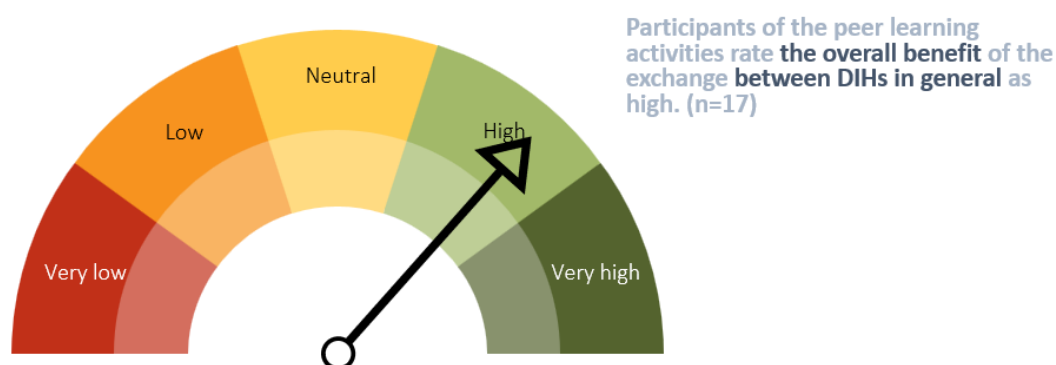


FIGURE 8: RESPONSES IN THE PEER LEARNING SURVEY TO THE QUESTION "HOW WOULD YOU RATE THE OVERALL BENEFIT OF SUCH EXCHANGE BETWEEN DIHS IN GENERAL?"

The **twinning sessions** were rated the highest in terms of usability by participants (see Figure 9). In each of these sessions, representatives of two organisations each discussed the transferability potential of their respective best practices and areas of improvement. As interview partners pointed out in the bilateral interviews for this report, while the twinning discussions could not make up for the perceived downsides of only seeing each other virtually, they still added quality to the connections within the network.

Participants of the peer learning activities rate the usability of the DIH twinning modules the highest.

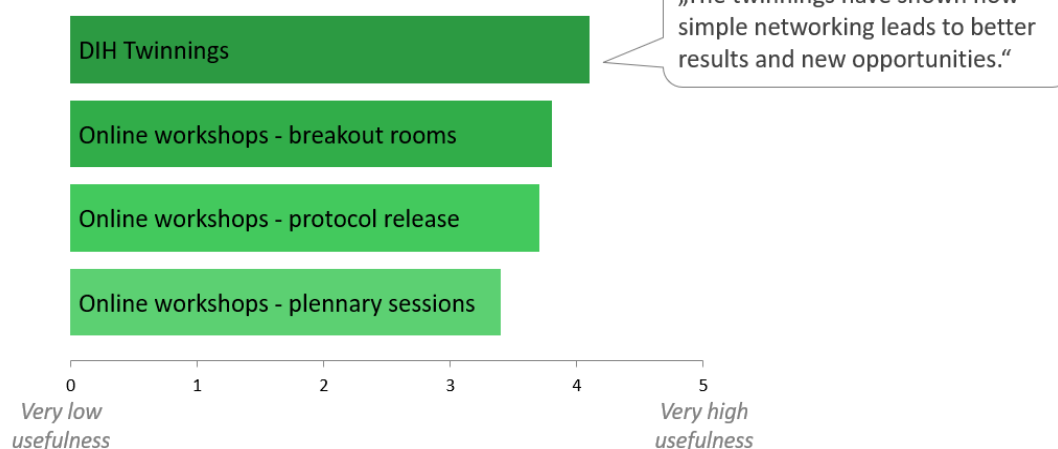


FIGURE 9: RATINGS OF THE USABILITY OF DIFFERENT ELEMENTS OF THE PEER LEARNING PROCESS

Based on the findings of the peer learning exchange, the consortium has written **two papers**. In deliverable D3.2 ("Design options paper on EU-AU best practices for inclusive digital entrepreneurship capacity building"), the consortium has not only documented the peer learning exchange but also summarised experience and good practice when it comes to fostering transparency, collaboration, critical mile distribution as well as digital upskilling and reskilling in their innovation ecosystems. The design options paper is made available for the interested public on the DIGILOGIC website. The second deliverable D3.3 also builds on findings of the peer learning exchange. It is a detailed concept for a DIGILOGICs capacity building programme (see section 3.3).

The third task that is assigned to objective 2 is the **co-creation impact labs**. Beginning in July 2022, the consortium will realise a total of six labs over the course of several months. Each lab is a 2-week programme in which up to 20 participants from Africa and Europe will work on an African business case within the topic of the logistical critical mile. The target group includes "techy guys, would-be entrepreneurs and self-employed people, startups, SMEs, ICT professionals" (<https://community.digilogic.africa/co-creation-labs/>). Besides the application forms and communication material, there have not been any outputs yet for the co-creation labs. The attached deliverable D3.5 is only due at the end of DIGILOGIC.

3.2.2. Outcome level

As regards the co-creation impact labs and the platform, a discussion of outcomes would be premature at the time of writing this report. It is not plausible to assume that there are any outcomes yet for the labs that are being implemented between July 2022 and December 2023, and outcome data regarding the platform is not yet available either.

3.3. OBJECTIVE 3: EMPOWERING AFRICAN YOUTH

Objective 3 puts a spotlight on yet another very specific target group outside of the consortium: African youth, especially women and vulnerable groups. Compared to the other goals, objective three is rather narrow in terms of how it is supposed to be reached. It comprises only one task: The implementation of a capacity building programme and a virtual job fair for African youth. Since the respective evaluation questions for objective three all cannot be answered at this stage of implementation – the capacity building programmes have just started at the time of writing in June 2022 – this report only briefly describes some reflections on the planning of the programme and the underlying programme theory that came up in the bilateral interviews (evaluation questions in grey).

TABLE 4: PROJECT TASKS AND EVALUATION QUESTIONS FOR OBJECTIVE 3

To empower African youth, especially women and vulnerable groups, with entrepreneurial and digital literacy skills to significantly increase good quality employment opportunities, including self-employment.	
Key project tasks involved	<ul style="list-style-type: none"> ● Task 3.3.: Inclusive digital & entrepreneurship capacity building programs for unemployed youth and vulnerable groups / Virtual Job Fair (VJF)
Evaluation questions	<ul style="list-style-type: none"> ○ Are the African youth participants demonstrating increased knowledge related to the content? ○ What worked well and why? ○ To what extent can African youth that participated in DIGILOGIC's upskilling activities use the acquired knowledge and skills? ○ Have African youth that participated in the Virtual Job Fair made connections with potential employers after the VJF? ○ What were the outcomes of these connections? ○ Did DIGILOGIC's upskilling activities and the VJF contribute to the employment (incl. self-employment and internships) of African youth in the logistic sector and beyond?

3.3.1. Activities and output level

The capacity building programme is a direct answer to the Horizon2020 call to **address vulnerable groups in Africa**. By offering a four-week course for African youth, the implementing DIHs MEST and BongoHive make the final link in a chain connecting the smart logistics expertise within the EU-based DIHs to the third layer of DIGILOGICs stakeholders, the target group "on the ground". The need for (digital) upskilling and reskilling of young entrepreneurs is described in greater detail in deliverable D3.2. Based on a thorough analysis of the smart logistics ecosystem, the authors of that report concluded that "digital human capital is a critical factor for successful digital entrepreneurial endeavours" (D3.2, p. 31), but also that "Digital entrepreneurship and digital skills represent a growing opportunity to empower youth and to enhance their chances of finding employment" (D3.2, p. 35).

DIGILOGIC is setting out to implement **two rounds of a capacity building programme** for African youth. The first one is being implemented online, under the lead of consortium member MEST for entrepreneurship training and BongoHive for the digital skills training. The second one will be hosted by BongoHive in Lusaka, Zambia, leading the entrepreneurship training and MEST leading the digital skills training online. In each programme, participants are required to attend three hours of class per day online for a duration of four weeks. In the classes, participants learn about Design Thinking methodologies they can apply when problem-solving. Through group work on case studies, participants are expected to build skills along the way (i.e. communication skills, leadership, technical solution mapping, product design, prototyping, critical thinking, pitch practice etc.). The respective methods are in part derived from the peer learning exchange and the corresponding design options paper (deliverable D3.2). By implementing the training, the DIGILOGIC consortium is meeting KPI21 ("Capacity building programme #courses") and KPI22 ("Capacity building programme #hours"). With a rate of more than 55%, the goal of attracting more than 40% female participants has been exceeded (see KPI22 "% of women participants to the capacity building programme").

3.3.2. Outcome level

Natural expected outcome of the capacity building programme: alumni being successful in the virtual job fair.

Since the capacity building programmes are just beginning at the time of writing this report in June 2022, no outcomes can be reported yet.

3.4. OBJECTIVE 4: THE CHALLENGES

Objective 4 addresses outcomes that result from two sets of activities. The first one is referred to in the project as the "Mentoring programme" (WP2). It comprises the offering of tech talk webinars on smart logistics topics as well as the opportunity for entrepreneurs and innovators to engage in company workshops and dedicated bilateral mentoring sessions. At the time of writing this report, three tech talks have been conducted so far. The "challenges" is DIGILOGIC's third capacity building intervention for participants outside the consortium (WP4). At the time of writing this report, the application process for the intervention has started, but there have not been any other interactions with the target group yet. Therefore, the evaluation questions that focus on outcomes/impact on the target group level (see Table 5) cannot be assessed yet and are marked grey. This section of the report instead puts a spotlight on the unique approach of the "challenges" and assesses results from the extensive preparation phase.

TABLE 5: PROJECT TASKS AND EVALUATION QUESTIONS FOR OBJECTIVE 4

To demonstrate the market relevance of the DIGILOGIC network of DIHs, engaging at least 200 EU-AU innovators in the call for Challenges to participate in the collaborative projects and value creation in different use cases suggested by stakeholders' needs.	
Key project tasks involved	<ul style="list-style-type: none"> ● Task 2.3.: Mentoring Programme on digital technologies for smart logistics ● Task 4.1.: Definition of scope and objectives ● Task 4.2.: Call for Challenges ● Task 4.3.: Proposals Assessment ● Task 4.4.: Bootcamp ● Task 4.5.: Challenges Monitoring and Reporting
Evaluation questions	<ul style="list-style-type: none"> ○ Is mentoring and access to facilities less than as co-designed, as co-designed; more than as co-designed ○ How much impact on capabilities is anticipated from the mentoring / facilities participated in: no effect; small effect; large effect

3.4.1. Activities and output level

There are **three types of capacity building activities** that are implemented under the label "**Mentoring**" (task 2.3). The mentoring activities address stakeholders that are mostly coming from the third layer of the DIGILOGIC stakeholder model (see Figure 2 on page 11).

The first mentoring activity is the so-called tech talks. It is a series of up to 25 virtual events organised by DHM and the Fraunhofer institute in which experts (potentially including experts from the first and second layer of project partners) present topics of smart logistics. The tech talks are hosted on the DIGILOGIC platform, and recordings are made available to all users of the platform. So far, three tech talks have been conducted in the format of online webinars on the topics of artificial intelligence, smart logistics with blockchain, as well as platforms and marketplaces. The acceptance of the format by the participants is currently being analysed, and the format is developed further by DHM and Fraunhofer. The second activity is a series of company workshops for entrepreneurs in their early stages of business development or for companies that are newly approaching certain issues of smart logistics. Topics of the company workshops can directly derive from the tech talks, but they can also deviate. The tech talks, however, are being used to promote the company workshops. The third activity under the term "mentoring" is a follow-up format for participants of company workshops. In individual coaching sessions, they can benefit from the facilitating experts' knowledge, receive feedback on how they have implemented their learnings from company workshops and discuss challenges.

The second set of activities that make a contribution to objective four is labelled "challenges" (abbreviated from "one-year support programme for 12 startup teams to address challenges in digital logistics in Africa, Europe, and between the two continents"). The consortium partner that is mainly responsible for these activities, VTT from Finland, has applied an **action research methodology** in order to prepare support for the 12 startup teams that will participate in DIGILOGIC's one-year programme "challenges".

In particular, support for the 12 startup teams will involve supporting them in the formulation, application, and evolution of business models. However, established business model frameworks do not directly address the primary objective of startups: to survive and grow in changing environments. This fundamental shortcoming may contribute to the global survival rate of startups being very low. To address this fundamental shortcoming, support for startup teams will include the use of a simple new business model method that directly and persistently addresses the need for startups to adapt to changing environments while maintaining internal stability.

The simple new method has been developed through action research iterations of review of natural science findings concerned with survival in changing environments, formulation of the new method, and obtaining feedback on the new method from startup experts. Findings in the action research carried out within DIGILOGIC are reported in four scientific journal papers that are attributed to the project (Fox, 2021a; Fox, 2021b; Fox, 2022; Fox and Vahala, 2022). Reception of the method by practitioners has been positive so far. Gerhard Malah, programme manager at MEST, has stated that in his opinion, "the method is sound, has realistic metrics, and gives room to collectively evaluate company performance". (<https://digilogic.africa/start-up-business-models/>)

Following the action research approach, the papers cited above, as well as further scientific sources, were used to inform the scope, objectives and methodology of the challenges (see Deliverable 4.1 for more details). The research reported in the papers draws upon findings from natural science about survival and growth in changing environments to provide a framework to think about business evolution. This perspective is taken up in Deliverable 4.1 and translated into the objectives of the "challenges" that foresee introducing certain principles, concepts and methodologies. As reported in Fox and Vahala (2022), startups can make more realistic assessments of their current state and also spot weaknesses and intervene accordingly in a timely manner. The monthly self-assessment rhythm is supposed to help participants develop a habit that ideally sustains after the "challenges" end.

It is too early to assess the **use of the startup monitoring tool within DIGILOGIC**. As reported in Fox and Vahala (2022), VTT has developed and tested a virtual interactive training to make it more accessible for the "challenges" participants, but it has not been put to use yet in accordance with the time plan. However, the tool is already being used by MEST in another context outside of DIGILOGIC, the UNICEF Startup Laboratory.

The **call for applications** for the "challenges" was launched on the DIGILOGIC platform on May 1st. It aims at receiving 200 applications by August 31st. Potential applicants need to be registered on the DIGILOGIC community platform. The "mentoring activities" and the "challenges" are implemented by different consortium partners. There is a high overlap in terms of target groups, but there is no significant overlap in terms of planning and implementation.

3.4.2. Outcome level

As was mentioned before, due to the timing of the activities that are expected to make a contribution to objective 4, there are no outcomes on the level of the target group yet.

3.5. OBJECTIVE 5: SUSTAINABILITY AND GROWTH

Objective 5 explicitly refers to the market relevance of the DIGILOGIC network with a special view on engaging innovators. As a reference to Task 1.3 ("ecosystem engagement") indicates, "innovators", in this case, refers to the network of board members around the consortium. It also refers to innovators beyond these organisations and companies who are supposed to take part in the call for Challenges and participate in collaborative projects (see Table 6). Sustainability in the context of this report is therefore understood in terms of a network that continues to exist after phasing out of DIGILOGIC.

To assess sustainability in this sense, this section looks at the activities and outputs with a special focus on task 1.3 (Ecosystem engagement) and asks to what extent and in which ways these are sustainable. It then assesses the question to what extent the outcomes may last after the phasing out of DIGILOGIC. More thoughts and ideas regarding DIGILOGIC's sustainability are put into writing in deliverable D5.4 ("Exploitation and sustainability strategy") just at the time of writing this report.

TABLE 6: PROJECT TASKS AND EVALUATION QUESTIONS FOR OBJECTIVE 5

To ensure post-project sustainability and growth of the DIGILOGIC ecosystem.	
Key project tasks involved	<ul style="list-style-type: none"> ● Task 1.3. Ecosystem engagement ● Task 5.4. Sustainability and exploitation plan
Evaluation questions	<ul style="list-style-type: none"> ○ What does the post-project future of the Pan-EU-African DIGILOGIC Hub look like? Will the hub continue to exist, and if so, in what form? ○ Which post-project hub conditions and strategies appear useful?

3.5.1. Activities and output level

One of the two tasks that is supposed to play a key role in DIGILOGICs sustainability is the **Ecosystem Engagement** (Task 1.3). This is an umbrella term for engaging stakeholders outside of the consortium. As was shown before (see Section 3.1), the first layer of relevant stakeholders around the DIGILOGIC consortium is formed by those organisations and companies that are represented in either the High Level Advisory Board (HLAB) or the Impact and Innovation Board (IIB).

The **HLAB** consists of ten experts on smart logistics coming both from Africa and the EU. They are holding a virtual meeting three times a year to give input and feedback on activities and outcomes of DIGILOGIC. In between the meetings, they stay in touch with the consortium and serve as a multiplier to spread information on DIGILOGIC's resources and activities within their own networks. The HLAB members are also supposed to play a larger role in the implementation of the challenges (see Section 3.4).

The **IIB** consists of six people who are, similar to the members of the HLAB, experts on smart logistics. The IIB has been meeting four times a year until March 2022. Its role is a little more hands-on compared to the HLAB since its members are supposed to play a role in the mentoring activities and co-creation labs. In order to make time and thereby enable members to make this contribution, the regular meetings were stopped after March 2022, when activities started one after another and will be proceeded with only one meeting per year.

It seems that **both boards have become reliable partners** for DIGILOGIC. Given the high relevance that is assigned to the topic of smart logistics, it was reportedly not difficult for the consortium to find high-profile stakeholders that could become board members. Interview partners from within the consortium describe the board members to be "quite enthusiastic", "quite engaged", and "excited", and their input to the DIGILOGIC activities so far is perceived as useful and valuable. Interview partners also point out that they benefit from the networks of their board members by using them as multipliers. This is particularly true for spreading information on the various activities that DIGILOGIC is now offering for target groups such as African youth as well as European and African innovators (WP 3 and 4).

Two challenges regarding the boards have been reported in the bilateral interviews. One is that the timing of setting up the boards was allegedly perceived as not ideal for the board members: For more than a year, DIGILOGIC has mainly focused on internal exchange and conceptual work. The implementation of activities for stakeholder groups beyond the consortium and its closest layer of networking partners is beginning just now. Some feel that the full potential of the board members, therefore, could not have been realised yet to date. The second challenge lies in finding a balance between making good use of the board members but not overexploiting them to a point where their engagement might be affected in a negative way.

The second group of stakeholders that supposedly plays an important role in the sustainability of the DIGILOGIC hub is the **EU-AU innovators** who are supposed to take part in various projects. It is too early to assess to what extent engaging them is successful since the call for applications for the challenges has just opened.

3.5.2. Outcome level

It would go beyond the scope of this report to answer the evaluation questions regarding the sustainability of the network engagement at an outcome level for two major reasons. First, the relations as described above have just formed or are still in the process of forming. It is not plausible to assume that these new relations have effects on an outcome already. Second, a thorough assessment of networks requires input from all partners of

the respective relationships to avoid positive bias. Since this report is based on only one interview with a board member and could not include any information from stakeholders beyond the boards, such an unbiased assessment is not possible.

4. CONCLUSIONS AND RECOMMENDATIONS

The structure of this section has evolved organically from the key findings. To avoid repetition and duplications, conclusions are not assigned to objectives but presented individually. There are two general conclusions that do not lead to a recommendation and a total of five conclusions with one or two recommendations each.

To begin on a positive note, **DIGILOGIC is on a good way**. All deliverables have been submitted on time, and most of the KPIs have either been achieved or even been overachieved at the time of writing this report. The overall satisfaction with DIGILOGIC among project partners is high. This includes satisfaction with the composition of the network, the relevance of the topic both for the consortium partners and for their target groups, as well as satisfaction with DIGILOGIC's activities. Even though external voices could not be included in this evaluation systematically, the readiness of board members to give advice and engage in DIGILOGIC's activities is an important indicator not only of its relevance but also of its attractiveness for key stakeholders in the ecosystem. This is an important precondition for the success of the remaining activities but also for the project's sustainability in more general terms.

Another important observation is that DIGILOGIC is composed of **very different stakeholders**, which entails **challenges** but can also be used as an **asset**. The DIGILOGIC partners are from Africa and from the EU; they represent very large and very small organisations; they are for-profit and not-for-profit, and they have diverse backgrounds ranging from very research-oriented to very practice-oriented. Most members have already reflected on these differences and how they explain different approaches to the topic of smart logistics and to various issues of collaboration. Now that the consortium has cooperated for 1,5 years already, members do know each other's capacities as well as strengths and weaknesses and can make full use of the diversity represented in the group.

One issue that came up frequently in interviews with DIGILOGIC stakeholders is COVID. Most consortium partners agree that it has been a challenge to build a hub and collaborate intensely on joint activities without ever meeting in person. While this is not true for every member of the consortium, it is true for the majority.

- **Recommendation 1:**

To overcome the perceived challenges of working remotely, we recommend that the consortium identifies opportunities for the project partners to meet in person. Besides the first in-person meeting that is planned to take place in Germany in September 2022, it may be helpful also to organise visits not for the whole consortium but for single organisations based on their individual needs to exchange and collaborate with each other on a deeper level.

- **Recommendation 2:**

The consortium members should critically assess whether the upcoming first in-person meeting in September can be taken as a chance to facilitate further personal exchange. Certain parties who are collaborating on certain tasks (not the whole consortium) might want to extend their stay.

The overall setup of DIGILOGIC is complex. It is organised in work packages and tasks that do not fully correspond to the logic of the objectives as stated in the M&E framework. It addresses different target groups at different levels with a broad range of activities that overlap in some cases and therefore risk competing with each other. In a complex and innovative setup like this, it is crucial to leave the level of tasks and activities from time to time and readjust planning with a view on the project's "guiding star".

- **Recommendation 3:**

Monthly consortium meetings already include an element of reflection on "anecdotal impact" on three different levels for each project partner. The consortium members should remind themselves of why this is a valuable exercise and make a commitment to using it in a more consistent way.

- **Recommendation 4:**

In order to sharpen the impact-oriented approach of DIGILOGIC, the project should make an effort and brainstorm how the activities for each of its different target groups (see Figure 2) can be focused even

further to address the leverage points that were identified in the map of the ecosystem (deliverable D1.2).

The perceived risk of working in silos and lack of exchange between the individual work packages is caused by several factors. A project of the size of DIGILOGIC must compartmentalise to some extent to keep tasks manageable and reduce transaction costs. In addition, the lack of a personal connection caused by COVID creates barriers to deeper interactions between consortium partners. Also, the differences between some of the organisations are simply quite big. However, compartmentalisation can be harmful to achieving the intended outcomes in a sustainable way, so it should be addressed.

- **Recommendation 5:**

Collaboration should not be regarded as purely task-centric. The DIGILOGIC team culture can be enhanced further by incentivising collaboration. This can be done, i.e. by taking the time to celebrate collaboration successes in the monthly meetings, by acknowledging those who are going the extra mile in terms of collaboration, and simply by checking in on each other also outside the scope of joint tasks.

The DIGILOGIC network has a Eurocentric bias when it comes to expertise in smart logistics. Even though there has been a significant amount of exchange between EU-based and African DIHs, there is still a need for capacity development for the Africa-based DIHs. Through collaborating in DIGILOGIC, the consortium has developed a better understanding of the gaps in knowledge and expertise and what it may take to fill them.

- **Recommendation 6:**

The African DIHs should take stock of their capacities with regard to expertise in smart logistics and, based on that stock-taking, develop ideas for follow-up activities to address these challenges. In particular, they are encouraged to strategically use the emerging connections with EU-based DIHs and other stakeholders while DIGILOGIC is still ongoing to move forward (stakeholder level 2 in Figure 2).

The DIGILOGIC platform was created from scratch, which took up more resources than was initially planned. The platform has the potential to become the brain, the heart and the hand of DIGILOGIC. Being a brain, it stores a plethora of smart logistics resources and thereby contributes to transparency in the sector. Being a heart, it brings together those stakeholders who run the sector and who have the potential to make an impact in the long run. Being a hand, it can be used to communicate and facilitate capacity development and exchange. To make full use of this potential, the consortium should continue to invest in the platform and contribute to a continuous process of improvement.

- **Recommendation 7:**

In order to not overwhelm the programming, the respective project partner should prioritise aspects of platform development. Not everything can be realised at once, and not everything is equally important.

- **Recommendation 8:**

User experience should be the first priority for platform development. The respective consortium partner should continue to think about how the platform can be made more attractive not only for learners but also for experts (such as consortium partners) who are providing content, i.e. by increasing visibility and outreach and by introducing more elements of gamification.

APPENDIX

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A. LIST OF INTERVIEW PARTNERS

Name of interview partner	Organisational affiliation	Date of the interview
Stephen Fox	VTT (Consortium member)	28 April 2022
Isaac Afriyie	MEST (Consortium member)	4 May 2022
Charlotte Edzard	Digital Hub Logistics (Consortium member)	4 May 2022
Claudia Knobloch and Paola Zisman	Endeva (Consortium member)	6 May 2022
Adriano Mauro	Prototipi (Consortium member)	9 May 2022
Toyin Dania	MEST (Consortium member)	9 May 2022
Maumo Mobila	BongoHive (Consortium member)	10 May 2022
Francesca Pozzar	Friuli Innovazione (Consortium member)	12 May 2022
Olayinka David-West	Lagos Business School (Board member)	30 May 2022

B. LIST OF CONSULTED PROJECT DOCUMENTATION

A) Deliverables

DIGILOGIC (2021): Vision and list of stakeholders (Deliverable D1.1)

DIGILOGIC (2021): Map of the ecosystem, video narration and brief on levers for change (Deliverable D1.2)

DIGILOGIC (2021): Strategic research and innovation agenda (Deliverable D2.1)

DIGILOGIC (2021): Agenda and Outline of the Online Mentoring Sessions (Deliverable D2.2)

DIGILOGIC (2021): Updated Version of the Agenda and Outline of the Online Mentoring Sessions (Deliverable D2.3)

DIGILOGIC (2021): DIGILOGIC eLearning platform user's guidelines (Deliverable D3.1)

DIGILOGIC (2022): DOP on EU-AU best practices for inclusive digital entrepreneurship capacity building (Deliverable D3.2)

DIGILOGIC (2022): AU Regional digital & entrepreneurship capacity building plans (Deliverable D3.3)

DIGILOGIC (2021): Challenges: Scope and Objectives (Deliverable D4.1)

DIGILOGIC (2021): Outreach and Impact Creation Strategy and Plan (Deliverable D5.1)

DIGILOGIC (2021): Impact methodological framework (Deliverable D5.2)

DIGILOGIC (2021): Project quality plan (Deliverable D6.1)

B) Other consulted project documentation

DIGILOGIC (2020): Proposal of DIGILOGIC to Horizon2020 (Proposal number: 101016583).

DIGILOGIC (2021-2022): Protocols of biannual/monthly project meetings

DIGILOGIC (2021-2022): Gantt Chart

DIGILOGIC (2022): Opportunities Flyer on three activities

DIGILOGIC (2022): Raw data on peer learning evaluation (Risposte)

European Commission (2020): Grant Agreement number 101016583 — DIGILOGIC

C. BIBLIOGRAPHY

Fox, S. and Vahala, P. (2022) Startups as adaptable stable systems based on synchronous business models. *Systems*, 10(3), 81.

Fox, S. (2022) Synchronous generative development amidst situated entropy. *Entropy*, 24(1), 89.

Fox, S. (2021b) Accessing active inference theory through its implicit and deliberative practice in human organisations. *Entropy*, 23(11), 1521.

Fox, S. (2021a) Future-proofing startups: Stress management principles based on adaptive calibration model and active inference theory. *Entropy*, 23(9), 1155.

D. INTERVIEW GUIDELINE



A note on this interview guideline:

The guideline was adapted to each interview partner depending on the organisational backgrounds and respective responsibilities within DIGILOGIC

Interview guideline consortium member

Interview data

Time and Date of the interview

Duration of interview

People present

Atmosphere

To do after the interview

Introduction

- THANK YOU for participating in the interview!
- Context: Conducting mid-term review of DIGILOGIC which is a requirement for EU
 - o Goals of the MTR are
 - To evaluate the level of achievements towards the overall project objectives so far
 - To understand potential challenges and problems and provide key recommendations to be addressed in the second part of project implementation
 - ➔ In other words: accountability toward the donor, but also contribution empirical data that can inform operational and strategic decision-making for the second half of the project.
- Conduct interviews with all consortium members
- Interview process: Record the interview, save file on Zoom Cloud, make a transcript for qualitative analysis, use transcript for computer-assisted qualitative data analysis
- Data security and anonymity: The entire interview recording and transcript will only be seen by me and my assistant; all information used in the report will be pseudonymized. Quotations pseudonymized, but if I need a quote with your name, I'll get in touch.
- I will list you as an interview partner in the annex.
- Duration of interview about one hour. Open questions, I'll come in here and there depending on how much you talk.

Do you have any questions before we dive in?

Main part

MOTIVATION: What is your personal and [your organisation's] motivation to participate in DIGILOGIC?

- What is [your organisation's] core interest in participating in DIGILOGIC?
- What motivated you personally to engage in DIGILOGIC?
- What kind of value (knowledge, network, manpower) can [your organization] add to a project like DIGILOGIC?

DIGILOGIC AS A WHOLE: What are your key takeaways regarding the design and implementation of DIGILOGIC as a whole?

- What were the greatest lessons learnt in DIGILOGIC so far for you?
- What was easier than you thought it would be in DIGILOGIC as a whole?
- What was more difficult than you thought it would be in DIGILOGIC as a whole?
- Has working remotely affected the project, and if so, in what way?
- What are your working conditions like in this EU project? What is supporting, what is a stumbling block?

PARTNERS IN DIGILOGIC: What are your key takeaways regarding [your organisation's] cooperation with the other consortium members of DIGILOGIC?

- How would you describe the composition of the DIGILOGIC network? Do you feel that crucial stakeholders are on board? Do you feel stakeholders are missing?
- Can you recall how partners for DIGILOGIC were picked?
- What can the African partners contribute that the European partners couldn't?
- What can the European partners contribute that the African partners couldn't?
- Which DIH has [your organisation] been collaborating with within DIGILOGIC? How do you perceive this collaboration? Have you experienced any synergies? What has worked well, and why, and what has not?

WP – IMPLEMENTATION: Please tell me where you are currently standing with regard to implementation of [include specific tasks of respective work package]

- Can you tell me about how implementation of [your work package] is going?
- Are you satisfied with the progress?
- Can you name any favourable or unfavourable conditions for implementation of [your work package]?
- What was easier than you thought it would be in [your work package]?
- What was more difficult than you thought it would be in [your work package]?

WP – IMPACT: Please tell me about the impact that you are envisioning for [your work package] and what it needs to get there.

- What impact will [your work package] have in a best-case scenario? What in a worst-case scenario?
- Which stumbling blocks do you foresee in further implementation?
- Have you thought of any reactions to these stumbling blocks?
- What strategies are you following to ensure that the challenges are sustainable to some extent?

- What is the minimal outcome that you would like to see in [your work package], what would be the best outcome?

SUSTAINABILITY: What is your take on the sustainability of the DIGILOGIC hub?

- Will the hub of DIHs continue to exist, and if so, in what form?
- What can you contribute to that vision?
- What support do you need now to contribute to post-project sustainability?
- Which major stumbling blocks or bottlenecks (internally or externally) to post-project sustainability do you see?

Thank you and leave-taking

- That was my last question – anything you find important and would like to add?
- Thank you for taking the time.
- Will finish the report toward the end of May for internal review.

E. SOCIAL NETWORK SURVEY QUESTIONNAIRE

DIGILOGIC network survey

1. Welcome and THANK YOU

Dear partners and supporters of DIGILOGIC,

your experience and perspectives are very valuable to us: We need to hear from you so that we can learn and improve.

Therefore, we are so grateful for you participating in our survey! Promise: It will only take about 10 minutes.

In case you have any questions, please don't hesitate and reach out to our M&E expert Evelyn Funk (evelynfunk@gmx.de).

Note on data handling: We assure you that we will treat all data collected through the survey in adherence to the requirements of the European data protection regulations (GDPR). We will process the data to ensure that responses cannot be traced back to individual organisations. The results will be made available as part of reports to our funder, the European Commission, and published openly only in an anonymised and synthesised way.

DIGILOGIC network survey

2. Section A

1. Please enter the full name of the organisation/enterprise/project you represent.

* 2. Which of the following groups does your organisation/enterprise/project **primarily** belong to (please select only one):

- | | |
|--|--|
| <input type="radio"/> Corporate Company | <input type="radio"/> Government and regional body |
| <input type="radio"/> Development partner | <input type="radio"/> Horizon2020 project |
| <input type="radio"/> DIH and innovation support programme | <input type="radio"/> Non-profit |
| <input type="radio"/> E-commerce and online retailer | <input type="radio"/> Research institution and academia |
| <input type="radio"/> Financing body | <input type="radio"/> Startup and Small or Medium Enterprise (SME) |

* 3. Please choose the country where your organisation/enterprise/project is located. For organisations/projects with multiple sites, please choose the one that is most relevant in the DIGILOGIC context. For enterprises, please select the country where your enterprise is headquartered.

DIGILOGIC network survey

3. Section B

* 4. Please indicate the type of connection the organisation/enterprise/project you represent has with DIGILOGIC.

- ☐ Consortium member
- ☐ Board member (IIB)
- ☐ Board member (HLAB)

* 5. What kind of connection did the organisation you represent have with each of the following organisations/enterprises/projects **prior to** DIGILOGIC?

Use a scale of 0-3 based on the guidelines below. Please do not overthink your answers and go with what is best suitable.

The row where your own organisation is displayed, please go with a 0.

0 - No connection: I don't know this organisation and/or I am not aware that the organisation I represent had an interaction with this organisation.

1 - Light connection: I or colleagues of mine have met representatives of this organisation for discussions.

2 - Good connection: The organisation I represent had a professional relationship with this organisation. We communicated occasionally and planned for collaboration.

3 - Strong connection: The organisation I represent had a professional relationship with this organisation. We collaborated with this organisation and worked together to coordinate activities or services, implement a shared project or similar.

	0 - No connection	1 - Light connection	2 - Good connection	3 - Strong connection
AFFORD	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AfriLabs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Amitruck	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bank of Industry Nigeria	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Byddog	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B-Hive, BongoHive Innovations Limited	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
City University	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
COLE Collective Hub	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
DHL	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
DHM - digital hub management gmbh	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Endeva e.V.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Friuli Innovazione	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Further Africa	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ghana UK Chamber	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lagos Business School	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
MEST, Meltwater Entrepreneurial School of Technology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Proctor and Gamble	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prototipi Technical Solutions, Nigeria Ltd.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
RTT	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SnooCode	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Southern African Innovation Support Programme (SAIS)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
VTT	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 6. What kind of connection does the organisation you represent **currently** have with each of the following organisations/enterprises/projects **in the DIGILOGIC context?**

Use a scale of 0-3 based on the guidelines below. Please do not overthink your answers and go with what is best suitable.

The row where your own organisation is displayed, please go with a 0.

0 - No connection: I don't know this organisation and/or I am not aware that the organisation I represent had an interaction with this organisation.

1 - Light connection: I or colleagues of mine have met representatives of this organisation for discussions.

2 - Good connection: The organisation I represent has a professional relationship with this organisation. We communicate occasionally and plan for collaboration.

3 - Strong connection: The organisation I represent has a professional relationship with this organisation. We collaborate with this organisation and work together to coordinate activities or services, implement a shared project or similar.

	0 - No connection	1 - Light connection	2 - Good connection	4 - Strong connection
AFFORD	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AfriLabs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Amitruck	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bank of Industry Nigeria	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Byddog	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B-Hive, BongoHive Innovations Limited	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
City University	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
COLE Collective	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Hub	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
DHL	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
DHM - digital hub management gmbh	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Endeva e.V.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Friuli Innovazione	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Further Africa	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ghana UK Chamber	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lagos Business School	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
MEST, Meltwater Entrepreneurial School of Technology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Proctor and Gamble	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prototipi Technical Solutions, Nigeria Ltd.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
RTT	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SnooCode	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Southern African Innovation Support Programme (SAIS)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
VTT	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

DIGILOGIC network survey

4. Section C

7. To what extent do you agree to the following statements to be suitable for you and the organisation/enterprise/project you represent?

	1 - strongly disagree	2 - disagree	3 - neutral	4 - agree	5 - strongly agree
Participating in DIGILOGIC has improved my knowledge about structures and actors in the African logistics sector.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Participating in DIGILOGIC has improved my knowledge about the digital transformation opportunities at the critical mile in Africa.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Through DIGILOGIC, my organisation/enterprise/project has strategically integrated the digital transformation of the African logistics sector.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
By working with DIGILOGIC, my organisation/enterprise/project has gained significant traction for digital transformation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8. Can you briefly explain the expectations you have/had for participating in DIGILOGIC activities?

9. Overall, how satisfied or dissatisfied are you with participating in DIGILOGIC activities so far?

1 - very dissatisfied	2 - dissatisfied	3 - neutral	4 - satisfied	5 - very satisfied
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10. What was your most valuable learning/insight/takeaway from your participation in DIGILOGIC activities?

11. Are there any aspects that could be improved within DIGILOGIC? If you have suggestions on how the improvements could be carried out, please indicate those as well.

12. Do you have any additional comments, suggestions etc.? Please add here:



F. CODEBOOK FOR QUALITATIVE ANALYSIS

Liste der Codes

Codesystem

Work packages

Work packages\WP 6

Work packages\WP 5

Work packages\WP 4

Work packages\WP 3

Work packages\WP 2

Work packages\WP 1

Collection of anecdotal impact in meeting protocols

Collection of anecdotal impact in meeting protocols\Level 1: Email exchange

Collection of anecdotal impact in meeting protocols\Level 2: secure engagement

Collection of anecdotal impact in meeting protocols\Level 3: systemic/sustainable impact

Objective 1: Building an EU-African network

Objective 1: Building an EU-African network\General reflections on objective 1

Objective 1: Building an EU-African network\Working with the boards

Objective 1: Building an EU-African network\Working with the boards\It was easy to get the board together

Objective 1: Building an EU-African network\Working with the boards\I follow the people on the board

Objective 1: Building an EU-African network\Working with the boards\Overutilizing board members

Objective 1: Building an EU-African network\Working with the boards\((Not) Sharing board members

Objective 1: Building an EU-African network\Outcomes of the collaboration





Objective 1: Building an EU-African network\Outcomes of the collaboration\Increased capacities
Objective 1: Building an EU-African network\Outcomes of the collaboration\Consortium members learned from the exchange
Objective 1: Building an EU-African network\Outcomes of the collaboration\DIGILOGIC connects stakeholders
Objective 1: Building an EU-African network\Outcomes of the collaboration\Being spokesperson for the EC
Objective 1: Building an EU-African network\Outcomes of the collaboration\Creating awareness for digital logistics
Objective 1: Building an EU-African network\Outcomes of the collaboration\Increased transparency through exchange
Objective 1: Building an EU-African network\Outcomes of the collaboration\EU and A partners connect beyond project
Objective 1: Building an EU-African network\Outcomes of the collaboration\European partners collaborate beyond project
Objective 1: Building an EU-African network\Outcomes of the collaboration\African partners collaborate beyond project
Objective 1: Building an EU-African network\Outcomes of the collaboration\Gained new relationships through DIGILOGIC
Objective 1: Building an EU-African network\Activities to reach out beyond consortium
Objective 1: Building an EU-African network\Activities to reach out beyond consortium\Taking part in events
Objective 1: Building an EU-African network\Activities to reach out beyond consortium\Organising events
Objective 1: Building an EU-African network\Activities to reach out beyond consortium\Reaching out to policymakers
Objective 1: Building an EU-African network\Describing assets and limitations in the network
Objective 1: Building an EU-African network\Describing assets and limitations in the network\It took long to understand partners
Objective 1: Building an EU-African network\Describing assets and limitations in the network\Admin capacities
Objective 1: Building an EU-African network\Describing assets and limitations in the network\Funds and resources
Objective 1: Building an EU-African network\Describing assets and limitations in the network\Knowledge of digital logistics
Objective 1: Building an EU-African network\Describing assets and limitations in the network\No knowledge of digital logistics
Objective 1: Building an EU-African network\Describing assets and limitations in the network\Being practitioner-oriented
Objective 1: Building an EU-African network\Describing assets and limitations in the network\Academic background





Objective 1: Building an EU-African network\Describing assets and limitations in the network\Expertise in entrepreneurship
Objective 1: Building an EU-African network\Describing assets and limitations in the network\Geographical spread
Objective 1: Building an EU-African network\Describing assets and limitations in the network\Experience with EU projects
Objective 1: Building an EU-African network\Describing assets and limitations in the network\Being profit-oriented
Objective 1: Building an EU-African network\Describing assets and limitations in the network\Social-oriented
Objective 1: Building an EU-African network\Describing assets and limitations in the network\Knowing the situation on the ground
Objective 1: Building an EU-African network\Describing assets and limitations in the network\Being a multiplier
Objective 1: Building an EU-African network\Motivations to participate in DIGILOGIC
Objective 1: Building an EU-African network\Motivations to participate in DIGILOGIC\Working with the EU
Objective 1: Building an EU-African network\Motivations to participate in DIGILOGIC\Geographical scope
Objective 1: Building an EU-African network\Motivations to participate in DIGILOGIC\Building systems change perspective into all activities
Objective 1: Building an EU-African network\Motivations to participate in DIGILOGIC\Driving the topic
Objective 1: Building an EU-African network\Motivations to participate in DIGILOGIC\Learning opportunity
Objective 1: Building an EU-African network\Motivations to participate in DIGILOGIC\Receiving new connections
Objective 1: Building an EU-African network\Motivations to participate in DIGILOGIC\Receiving funds
Objective 1: Building an EU-African network\Motivations to participate in DIGILOGIC\Digital logistics is a relevant topic
Objective 1: Building an EU-African network\Satisfaction with collaboration
Objective 1: Building an EU-African network\Satisfaction with collaboration\Different cultures/mentalities in collaboration
Objective 1: Building an EU-African network\Satisfaction with collaboration\WPs dovetailing into each other by design
Objective 1: Building an EU-African network\Satisfaction with collaboration\Lack of overlaps with some partners (+)
Objective 1: Building an EU-African network\Satisfaction with collaboration\Working remotely as an asset
Objective 1: Building an EU-African network\Satisfaction with collaboration\Process is not fluent





Objective 1: Building an EU-African network\Satisfaction with collaboration\No discussion and no argument
Objective 1: Building an EU-African network\Satisfaction with collaboration\Not being together on the same boat
Objective 1: Building an EU-African network\Satisfaction with collaboration\Satisfaction with own input
Objective 1: Building an EU-African network\Satisfaction with collaboration\Satisfaction with input from other consortium members
Objective 2: Strengthen DIH technology transfer capabilities
Objective 2: Strengthen DIH technology transfer capabilities\Output peer-learning activity (T3.2)
Objective 2: Strengthen DIH technology transfer capabilities\Output co-creation labs (T3.4)
Objective 2: Strengthen DIH technology transfer capabilities\Output co-creation labs (T3.4)\Board is excited about co-creation labs
Objective 2: Strengthen DIH technology transfer capabilities\Output co-creation labs (T3.4)\Including systems perspective into peer-learning activities
Objective 2: Strengthen DIH technology transfer capabilities\Output co-creation labs (T3.4)\Implementing co-creation labs online is a negative
Objective 2: Strengthen DIH technology transfer capabilities\Output: Community platform (T3.1)
Objective 2: Strengthen DIH technology transfer capabilities\Output: Community platform (T3.1)\Technical issues
Objective 2: Strengthen DIH technology transfer capabilities\Output: Community platform (T3.1)\We are sometimes frustrated
Objective 2: Strengthen DIH technology transfer capabilities\Output: Community platform (T3.1)\The platform does not engage users
Objective 2: Strengthen DIH technology transfer capabilities\Output: Community platform (T3.1)\Makes communication 10 times harder
Objective 2: Strengthen DIH technology transfer capabilities\Offer for African innovators
Objective 2: Strengthen DIH technology transfer capabilities\Offer for African innovators\DIGILOGIC community platform
Objective 2: Strengthen DIH technology transfer capabilities\Consortium tech transfer capabilities
Objective 2: Strengthen DIH technology transfer capabilities\Consortium tech transfer capabilities\Challenges to increasing tech transfer capabilities
Objective 2: Strengthen DIH technology transfer capabilities\Consortium tech transfer capabilities\Perceived synergies of African-European exchange
Objective 2: Strengthen DIH technology transfer capabilities\Consortium tech transfer capabilities\Improved technology transfer capabilities
Objective 3: Empowering youth





Objective 3: Empowering youth\Expected outcomes
Objective 3: Empowering youth\Expected outcomes\Limited expectations after short programme
Objective 3: Empowering youth\Expected outcomes\Increase awareness for logistics
Objective 3: Empowering youth\Expected outcomes\Give youth networking opportunities
Objective 3: Empowering youth\Expected outcomes\Increased chances in employment
Objective 3: Empowering youth\Output design options paper
Objective 3: Empowering youth\Enlarged networks
Objective 3: Empowering youth\Gained digital literacy
Objective 3: Empowering youth\Reflections on objective 3
Objective 4: Challenges
Objective 4: Challenges\Different perceptions of impact
Objective 4: Challenges\Not understanding the challenges
Objective 4: Challenges\Challenges participants are kept accountable regularly
Objective 4: Challenges\Outcome expectations WP4
Objective 4: Challenges\Applying action research
Objective 4: Challenges\Describing the challenges
Satisfaction with progress
Objective 5: Post-project sustainability and growth
Objective 5: Post-project sustainability and growth\Follow-up project ideas
Objective 5: Post-project sustainability and growth\Digital logistics is a relevant subject
Objective 5: Post-project sustainability and growth\Doubts about sustainability (no money, no honey)
Objective 5: Post-project sustainability and growth\Forming a hub post-project





Objective 5: Post-project sustainability and growth\Exploiting learnings, schemes or methodologies
Objective 5: Post-project sustainability and growth\Hindering sustainability
Objective 5: Post-project sustainability and growth\Supporting sustainability
Objective 5: Post-project sustainability and growth\Supporting sustainability\Creating relationships that stay
Objective 5: Post-project sustainability and growth\Supporting sustainability\Creating products that stay
Objective 5: Post-project sustainability and growth\Supporting sustainability\Offering matchmaking services to be more attractive
Objective 5: Post-project sustainability and growth\Supporting sustainability\Motivated to participate to get experience in African markets
Objective 5: Post-project sustainability and growth\Supporting sustainability\Motivated to participate in order to exchange with EU DIHs
Objective 5: Post-project sustainability and growth\Future of the platform
Objective 6: Project implementation
Objective 6: Project implementation\The overall setup is confusing
Objective 6: Project implementation\Capacities were not assessed sufficiently prior to DIGILOGIC
Objective 6: Project implementation\No clear enough planning
Objective 6: Project implementation\DIGILOGIC has competing activities (+)
Objective 6: Project implementation\Working in silos by design (+)
Objective 6: Project implementation\The problem was the call
Objective 6: Project implementation\You don't have to run after partners
Objective 6: Project implementation\Online meetings are tiring
Objective 6: Project implementation\Online meetings are tiring\Not everyone is seen in large meetings
Objective 6: Project implementation\Too ambitious planning
Objective 6: Project implementation\Collaboration under COVID
Sentiments





Sentiments\Low satisfaction
Sentiments\High satisfaction
Sentiments\Moderate satisfaction



G. LIST OF KPI (AS OF SEPTEMBER 23rd, 2022)

KPIs		Means of measurement	M18 (value)	M18 value (goal)	M36 value (goal)	Objectives					
						O1	O2	O3	O4	O5	
1	O1 AU DIHs development and EU-AU DIHs partnerships	Methodological framework and guidelines towards impact assessment and sustainability (WP1 and WP5) (# of reports, D5.1, D5.2, D5.3)	3	3	3	...	.	.	.	.
2		1-to-1 interviews with stakeholders (ENDEVA)	52	20	40	...	...	.	...	...
3		Identify partners and key stakeholders outside consortium (ENDEVA)	25	25	50	...	...	...	...	...
4		Stakeholders #webinars, #periodic calls #mailing list members (PROTON)		3	3	6
				3	3	6					
				250	200	500					
5		Creation of the HLAB (WP1)	1	1	1	...	...	...	...	...
6		Basic training on systems thinking to DIGILOGIC DIHs	1	1	1	...	.	.	.	...
7		DIHs Peer learning #study visits, #peer learning workshops, #twinning sessions (FINN)		0	3	3
	5		5	5	...	...	.	...	...
	10		10	10	...	...	.	...	...
8	O2 Strengthening innovation ecosystem for startups	Smart logistics mentoring #webinars	3		≥25	.	...	...	...	.
9		Participants to each live webinar (Average)	32	30	50	...	...	...	...	..
10		#Challenges for smart logistics collaborative project	0		4	...	...	...	...	..
11		# Proposals received for collaborative projects and % of women innovators	0		200	...	...	...	...	..
			0,00%		≥40%						
12		Bootcamp participants	0		50	...	...	..	.	..
13		# selected collaborative projects	0		12	..	...	...	..	.
14		# successfully completed projects	0		>8	..	...	..	..	.
15		# voucher hours mentoring for collaborative projects	0		1000	...	...	.	.	.
16		# voucher hours facilities for collaborative projects	0		1000	...	...	..	.	.
			0		4						
17		# webinars mid-term progress collaborative projects' #participants	0		30	...	...	..	..	..
			0		1						
18	# Pitch webinar for successfully completed collaborative projects #participants	0		100	...	...	..	..	..
		0		1							
19	Demo day co-located with major event	0		1	.	...	...	...	.
20	O3 Entrepreneurial & innovation skills to foster employment	Participants to the eLearning platform	809	500	1000	...	...	...	..	..
21		Capacity building programme #courses	1	1	2	.	.	...	.	.
22		Capacity building programme #hours	60	60	120	.	..	...	.	...
			% of women participants to the capacity building programme	55,00%							≥40%
23		#participants successfully completing the course	27	25	50	.	..	...		..
24		1Virtual Job Fair (#participants, #employers)	0		60	..	..	...	.	.
			0		20						
25		# Co-creation Impact labs #participants	0		6	...	..	...	.	..
26	O4 Sustainability	# logistics industry players actively engaged	10	2	5	.	..	..	...	.
27		# of diaspora communities involved	1	1	2	.	...	..	...	.
28		Impact assessment	1	1	2	...	..	..	...	..
29		Sustainability/Business Plan (WP5)	0		1	...	..	.	...	..
30	O5 Digital 4 development & H2020 international dimension	# international events attended/presented at	20	12	24	...	..	..	.	...
31		collaboration with ICT-58 CSA and IA projects and other H2020 relevant #projects events participation	11	6	10	..	...	.	.	...
32		Engagement of new AU stakeholders to activities related to EC funded projects	14	4	10	..	..		...	...
33		Engagement of AU innovators in DIGILOGIC project activities (#participants)	761	500	1000	...	...	..	..	...
34		Established relationship with #AU universities, vocational training centers	7	5	10	.	...	...	..	...
35		Earned media outreach in AU-EU #readers	1200000	100000	200000	.	.	.	..	...