DIGILOGIC

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Deliverable 1.5
Note on the integration of a systemic perspective in the work of the consortium

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Abstract	This report shows how the system perspective influenced the design of DIGILOGIC's activities and how the leverage points for system change were addressed. In addition, it contains the learnings from implementing the system perspective.
Keywords	System change, system thinking, logistics sector, Africa, system change, critical mile

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NATURE OF THE DELIVERABLE	**R**	
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PU	Public, fully open, e.g. web	√
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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, patent filing, press & media actions, videos, etc.
OTHER: Software, technical diagram, etc.

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EXECUTIVE SUMMARY

DIGILOGIC aimed at not only supporting innovation in the smart logistics sector in Africa but also **changing the system of critical mile logistics by changing dynamics that currently hinder the inclusion of innovation and startups in the sector.**

The deliverable 1.5 (D1.5) is a **knowledge product on how systems thinking was included in the consortium's work.** It is based on the analysis of all DIGILOGIC activities between May 2021 and September 2023. It summarises how the insights from the system mapping in work package 1 (WP1), especially the leverage points, influenced the design of all activities of the programme.

The leverage points are transparency, a collaborative platform, guarantor-entrusted financing, connecting the formal and the informal sectors and building strong use cases and business models.

DIGILOGIC aimed at **increasing the transparency in the smart logistics system** in Africa because, across the board, the critical last mile ecosystem remains relatively opaque, preventing players from being aware of each other. To address this leverage point, DIGIGLOGIC **created and shared a system map** with system dynamics and the relevant actors to increase the knowledge about the sector. It also currently writes a **policy recommendation paper to interact with policymakers** together with other Horizon2020 projects under the ICT58 call and created many opportunities for stakeholder exchange. In addition, DIGILOGIC **created in-depth knowledge about smart logistics** in Africa to ensure the dissemination of the topic.

The system mapping discovered that once key stakeholders in critical mile logistics have become aware of their mutual existence and scope of actions, they might be ready for collaboration**. Such collaboration could take place through the intermediary or a third-party-operated platform** to overcome symptomatic trust issues.

DIGILOGIC provided such an online platform which was used for programme and outreach activities. In addition, it **organised matching events** like a virtual job fair and networking sessions during consortium meetings.

In DIGILOGIC, through discussions with the winners of the challenges programmes, it became clear that **access to funding** is one of the biggest hurdles for startups to grow their businesses. Thus, **linkages to finance providers**, **training on how to pitch** and **information on how to find the right source of financing** were in high demand from the startups and were addressed by DIGILOGIC.

Informal last-mile distributors and retailers play a vital role in alleviating global poverty and contributing to the Sustainable Development Goals in remote rural areas. Yet, these informal structures need support and capacity training. This improves their readiness to be integrated into the formal logistics supply chain and leverage digital solutions for inventory, customer management, etc.

DIGILOGIC addressed this leverage point by **co-creating business ideas for the informal sector** in the co-creation IMPACT labs, by supporting **startups that strengthen and collaborate with the informal sector** and by **collaborating with key actors** like the Global Distributors Collective to strengthen the ecosystem for informal trade and logistics.

The system map revealed that it is necessary to bridge the gaps between actors along the smart and physical critical mile logistics to **showcase more robust use cases and business models collaboratively**. When successful startups become visible, the smart logistics narrative becomes one where the benefits outweigh the risks.

DIGILOGIC addressed this topic by organising a **peer exchange on the topic of how to better support smart logistics startups** by **supporting smart logistics startups directly** and by **re- and up-skilling talents** for the smart logistics sector.

Overall, these activities helped to address systemic challenges, mainly because DIGILOGIC has **selected the focused scope** of "critical mile logistics", it **tested formats** that now can be replicated because DIGILOGIC **created a network of organisations** which implemented the activities together and because DIGILOGIC **took a bottom-up approach** which also considered the needs of the innovators in the sector.

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ABBREVIATIONS

AU	African Union
DG INTP	Directorate General for International Partnerships
DIH	Digital Innovation Hub
EC	European Commission
EU	European Union
GDC	Global Distributors Collective
ICT	Information and communication technology
UNCTAD	United Nations Conference on Trade and Development
UNIDO	United Nations Industrial Development Organisation
UNDP	United Nations Development Programme
WP	Work package

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1 INTRODUCTION

DIGILOGIC aimed at not only supporting innovation in the smart logistics sector in Africa but also changing the system of critical mile logistics by changing dynamics that currently hinder the inclusion of innovation and startups in the sector.

As system change is a long-term goal ("a guiding star"), DIGILOGIC also defined a "near star" mid-term goal. This included that the project set out to work on the leverage points to change the system. More details on the starting point of this project are provided in Chapter 2.

1.1 OBJECTIVES

This deliverable is a knowledge product on how systems thinking was included in the consortium's work and how it influenced the design of DIGILOGIC's activities.

The deliverable is also a documentation of learnings and lessons for future implementation of similar projects.

1.2 METHODOLOGY

The Deliverable 1.5 (D1.5) is based on the analysis of all DIGILOGIC activities between May 2021 and September 2023. It summarises how the insights from the system mapping in work package 1 (WP1) influenced the design of all activities of the programme.

Deliverables 1.1 and 1.2 contain the methodology of how we arrived at the scope and the core story of the system. Chapter 2 of this deliverable is mainly taken from these two deliverables as the insights served as a starting point and guiding star.

To enable all consortium partners to work in the systems logic, Endeva provided training on system change at the beginning of the project for all consortium partners (February 2021) and included all consortium partners in the process to find a vision and explore the system of critical mile logistics in Africa.

Endeva is the WP1 lead and ensured that the guiding start of the programme was included in the activities and that the topics were in line with the leverage points. This deliverable summarises the results of this task.

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2 STARTING POINT: CURRENT SYSTEM CONFIGURATION

2.1.1 Scope of the system

Based on the findings of the primary and secondary data collected at the beginning of DIGILOGIC, the critical mile was defined as the focus system of DIGILOGIC. The critical mile may be described as a product's journey from a local warehouse to the end consumer, as shown in Figure 1. On the ground, **critical mile logistics includes an array of steps beyond simple transport considerations, such as tracking, geo-localisation, and cold chain management, to hardware with considerations for environmentally-friendly vehicles.**

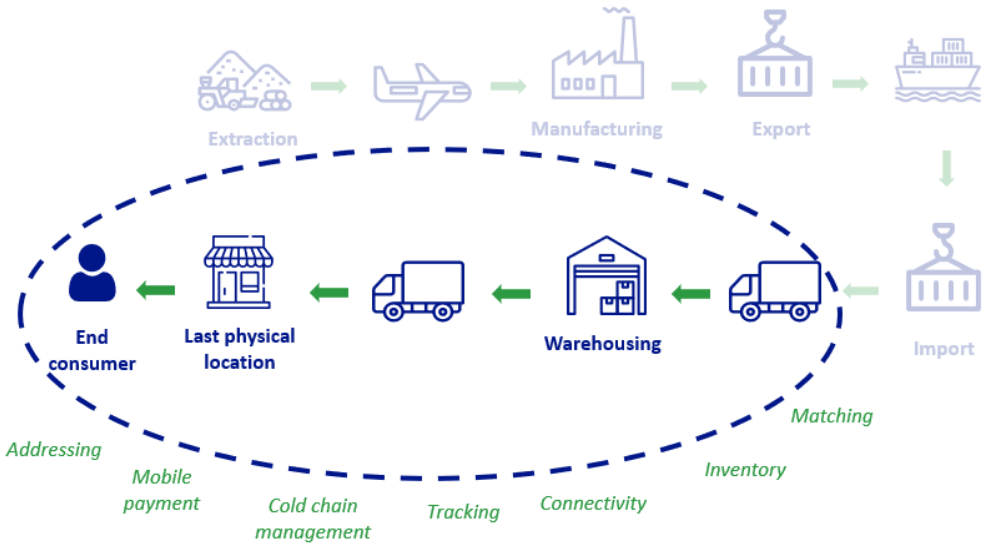

FIGURE 1: LOGISTICS AT THE CRITICAL MILE

2.1.2 Vision for the system

Smart solutions leveraging innovation play a pivotal role in optimising steps in the critical mile. They are reducing operational costs, increasing transparency, bridging market gaps and strengthening critical supply chains. However, despite their impact, many challenges remain in the African logistics context, and innovations and technology have yet to leverage their potential when it comes to the transformation of the critical mile in Africa. We ask ourselves how we might go from a system where tech and innovation are optimising small steps in the critical mile to one where tech and innovation transform the system.

For the critical mile logistics in Africa, **the long-term vision is to make critical mile logistics more efficient, affordable, inclusive and sustainable in Africa through innovation supported by Digital Innovation Hubs (DIHs)**. This vision provides a direction which the solutions developed by DIGILOGIC aim to meet.

As the guiding star is a relatively long-term goal, it is critical to develop a more short-term mission in systems change methodology, the near star. In 2021, the DIGILOGIC consortium partners agreed that **the near star** was set to be: **Pan African – EU ecosystem partnerships, facilitated by DIHs, have created, promoted, and scaled technological innovations that strengthen critical mile logistics in ways that are beneficial for the economy and the society in Africa.** This near star will guide the DIGILOGIC project to create new solutions in smart logistics and support existing solutions to scale with the help of their new partners and support from DIHs.

Finally, to operationalise this vision and mission, a guiding question was set: "**How might we create partnerships, facilitated by DIHs within the logistics ecosystem, that leverage technology to make critical mile logistics in Africa more efficient, affordable, inclusive and sustainable?**". The guiding question helps identify the pathway that will lead to the desired envisioned future for critical mile logistics in Africa.

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2.1.3 The core story and leverage points of the system

The core story of the system in Africa's smart critical mile logistics ecosystem reveals significant challenges. The anchor narrative for most of the loops in Africa's smart critical mile logistics system is the following (shown in Figure 2 below): **Currently, the critical mile logistics ecosystem in Sub-Saharan Africa is weak. Collaboration of actors across the logistics value chain becomes a costly endeavour, leading larger players to vertically integrate while smaller innovative players remain scattered and struggle to scale. Consequently, no robust and unified narrative and actors emerge for a sector where inefficient silo endeavours and duplications prevail, weakening the ecosystem.**

Understanding and mapping the system is a powerful tool for visualising the current system in a way that helps to identify opportunities for impactful desired change. The narrative of the leverage points establishes connections between the parts of the system that could be engaged. It also shows how these actions are expected to affect key dynamics and contribute to broader, long-term systems change.

The narrative for the leverage points in the DIGILOGIC system is the following: **Providing readily available information on the innovative small and large players** in smart logistics will affect the regulations in the transport and logistics sector and funding opportunities for the companies. Through this greater ecosystem transparency, a **collaboration platform for key actors to meet and explore their synergies can be developed and orchestrated by unbiased third parties such as DIHs**. Once actors have the structure and incentives to collaborate, smaller players would gain guarantor credibility by collaborating with established larger actors to access financing. **Even the informal sector of distributors and retailers can be included** in such an improved and coordinated system by leveraging current intermediary initiatives and enabling greater collaboration. A firmer and more structured ground for collaboration allows for **building more consequential use cases and business models for the sector.** Figure 2 provides an overview of this story.

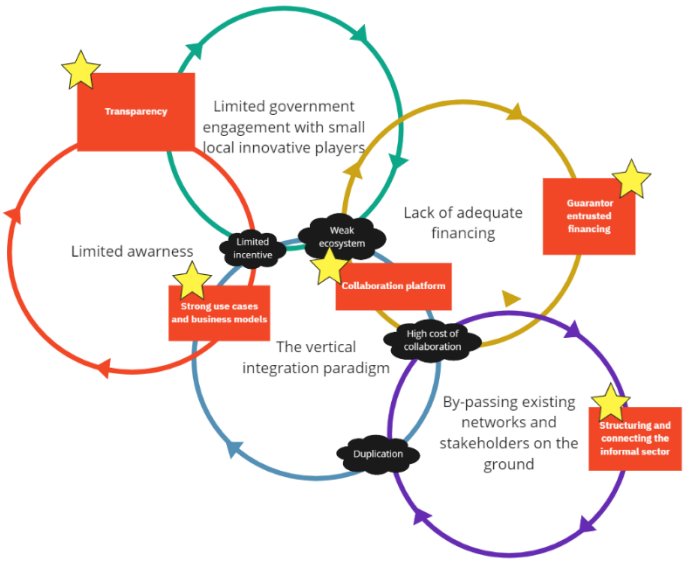

FIGURE 2: THE LEVERS FOR CHANGE IN CRITICAL MILE LOGISTICS

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3 WORKING ON THE LEVERAGE POINTS

The ecosystem mapping and opportunity spotting reinforced the importance of the DIGILOGIC project's endeavour. **Logistics and transport in Africa, especially in the critical mile, hold pivotal importance**.

During the last 2.5 years, it became clear that **DIHs can play an important role in unleashing this sector's potential** by bringing key stakeholders together to create, promote and scale technological innovations that strengthen critical mile logistics in transformative ways beneficial for the economy and society in Africa.

This report shows **how the system perspective along the leverage points was included in DIGILOGIC's activities.** The leverage points are transparency, a collaborative platform, guarantor-entrusted financing, connecting the formal and the informal sectors and building strong use cases and business models.

The leverage points vary in specificity: Creating transparency, building strong business models and a collaborative platform allowed for a wide variety of DIGILOGIC's activities to contribute. The other two – the inclusion of the informal sector and guarantor-entrusted financing - are very specific. Yet, both of them were addressed, for example, as topics of webinars or co-creation labs.

The activities of DIGILOGIC had been planned during the proposal writing in mid-2020. Thus, the overall activities, their duration and target group were quite clear from the onset of the project. Yet, **for every activity of the project, Endeva, as a "guardian" of the system perspective, was involved in the design of the activities** – either actively or in a consultative process.

The following subchapters provide examples of how the system perspective was included in DIGILOGICS activities.

3.1 TRANSPARENCY

DIGILOGIC aimed at **increasing the transparency in the smart logistics system** in Africa because, across the board, the critical last mile ecosystem remains relatively opaque, preventing players from being aware of each other.

Transparency and access to readily available information allow, for example, **regulators to better overview actors operating in their jurisdiction**. While easily accessible information could **provide startups with a better overview of their peers, providing similar or complementary services and better awareness of the regulations affecting them**. Lastly, financing partners such as **investors could benefit from a better overview of promising trends and potential investees to support**.

THE SYSTEM MAPPING CREATED TRANSPARENCY ABOUT SYSTEM DYNAMICS AND ACTORS

In WP1, the **DIGILOGIC consortium and many different system actors co-created a system map** by contributing their knowledge and networks. The mapping focused on the needs of the startups and showed how the ecosystem could be improved. The insights of the system mapping were gathered in **a short video** that is available on YouTube. This made it possible to share the insights in presentations and through social media to **inform all actors in the system about the needs of digital logistics startups**.

The interactive process of 50+ interviews and two online expert consultations laid the **foundation for the DIGILOGIC stakeholder network** of – among others - startups, logistics companies, ecosystem support organisations, universities and public organisations supporting innovation.

Many of the people who participated in the mapping also contributed to other DIGILOGIC activities like the co-creation labs, webinars or research activities, as shown in the figure below with the example of the addressing company SnooCODE. During an online meeting in October 2023, Zara Abbey, the partnership manager of

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SnooCODE, mentioned that they have benefited, among others, from increased visibility for job seekers and from being connected to the DIGILOGIC ecosystem.

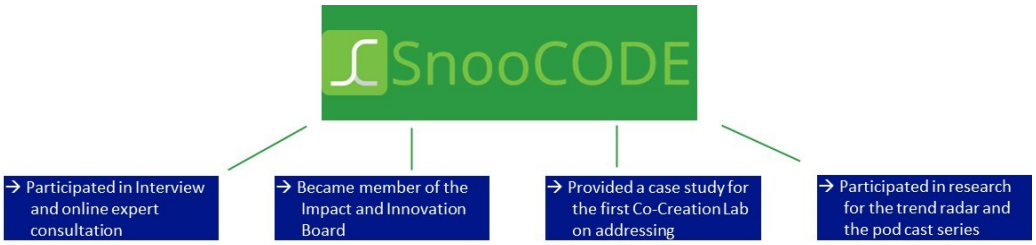

FIGURE 3: DIFFERENT TOUCHPOINTS WITH SNOOCODE

POLICY RECOMMENDATION PAPER HELPS TO INTERACT WITH POLICYMAKERS

Besides working toward their goals and objectives and thereby contributing to the EU-AU Innovation Agenda[1] (published in its final version in July 2023), funded projects such as DIGILOGIC always generate valuable learnings along the way. These learnings are often reflected in respective deliverables and assets of the project, but many times, they need to be gathered and consolidated in order to draw overall conclusions. This is despite the fact that these insights build an excellent basis for the European Union to develop and shape the future strategic agenda. Even more relevant for the European Union is the connection of experiences and insights across projects. In the second half of the project, DIGILOGIC focused more directly on the policymakers' engagement (also based on the reviewers' recommendation). In order to maximise the relevance of the learnings generated throughout the project, DIGILOGIC approached the writing of a policy recommendations paper together for digital innovation hubs collaboration across Europe and Africa, with the ICT58-projects AfriConEU, Hubiquitous, AEDIBNET, and mAkE will be shared with interested and relevant policymakers across EU and AU by December 2023. Moreover, DIGILOGIC:

- Invited the EU Commissioner responsible for Transport & Infrastructure in Zambia to the DIGILOGIC consortium meeting in Lusaka
- Continuously updated the EU Delegation in charge of innovation and technology in Abuja (Nigeria), with one-to-one meetings with Ms Samuela Isopi (EU Ambassador in Nigeria)
- participated in the AfriconEU Policy Makers Roundtables in Ghana (MEST) and Nigeria (Apodissi) in September/October 2023, bringing forward the experience of the DIGILOGIC project, and organised a workshop panela at the Internet Governance Forum 2022 in Addis Ababa (Nov 2022) titled "The role of Digital Innovation Hubs to ensure digital inclusion to all, especially youth". The recording is available on YouTube; in this context, speakers from GIZ (leading the Digital Transformation Centre in several African countries), the EC and the PRIDA project were invited to provide their forward-looking perspectives.
- DIGILOGIC was presented (PROTOTIPI) at the AU-EU Innovation Agenda Stakeholder Event in Nairobi (Nov 2022), where European and African policymakers were meeting up with the innovation and research community to hear the needs, good practices and advice for the drafting of the AU-EU Innovation Agenda (then published in its final version in July 2023)
- DIGILOGIC reached out to other European Commission Units (i.e. DG INTPA and DG Research) in order to look for synergies and good practices experiences. In particular, it invited Dr Vincenzo Lorusso (EC Officer to several events online and to attend the Policy Paper Workshop organised by DIGILOGIC with all the ICT-58 projects in Cape Town in June 2023)

[1] https://research-and-innovation.ec.europa.eu/system/files/2023-07/ec_rtd_au-eu-innovation-agenda-final-version.pdf

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- Last but not least, DIGILOGIC worked to engage other international agencies (such as UNIDO or UNDP) in the dialogue, inviting them to attend and speak at DIGILOGIC events and informing them about the progress of the activities, aiming at disseminating the project's good practices and learnings for replication.

FIGURE 4: WORKSHOP TO DISCUSS POLICY RECOMMENDATION PAPER

THE CONTINUED STAKEHOLDER ENGAGEMENT ENSURED EXCHANGE AMONG ACTORS

DIGILOGIC created opportunities for the stakeholders in the critical mile logistics system to interact and exchange. A lot of the interactions, especially in 2021 and 2022, were conducted online due to the COVID-19 restrictions, but starting in September 2022, DIGILOGIC also organised in-person meetings.

The DIGILOGIC online Co-Creation Lab fostered stakeholder collaboration, centering on real-world African logistics scenarios. Assisted by European and African Digital Innovation Hubs, participants delved into service design, rapid prototyping, and logistics technology. With active participation from over **150 online attendees, the lab sessions were enhanced by entrepreneurs and experts sharing their valuable insights and experiences,** particularly concerning challenges in e-commerce and last-mile logistics services.

Among these opportunities to meet in person were, for example, the DIGILOGIC Bootcamp in Helsinki, Finland, and Dortmund, Germany, for the participants of the DIGILOGIC Challenge Programme. The representatives of **twelve African startups met for peer exchange on topics like business modelling and finance. Also, they had the opportunity to network with Finish ecosystem support organisations** like FinnPartnerships and Business Finland. This boot camp built the basis for the following 1-year mentoring programme.

FIGURE 5: PHOTOS FROM BOOTCAMP IN HELSINKI

Presentation of Business Finland

Discussions during the boot camp

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During a series of eight webinars (in May 2023 and November 2023) on the topic of collaboration and financing, the same twelve startups had the opportunity to exchange with finance providers like GIZ, VC4A, DB Schenker, Pandion Innovation for Impact, impacc GmbH and Africa Green Tec. These **webinars gave the startups the opportunity to link to the investors and the investors the opportunity to get in touch with potential investees**.

The DIGILOGIC Virtual Job Fair on February 7th, 2023, marked the culmination of the DIGILOGIC Capacity Building program, focusing on entrepreneurship and digital skills development in Africa. It invited a diverse range of participants, including job seekers, professionals, and organisations looking to hire talent. With 128 diverse job seekers participating, the event served as a networking hub, connecting them with potential employers from both the logistics and tech sectors. Through virtual booths and interactive sessions, job seekers explored job opportunities and engaged with employers while also benefiting from informative webinars and workshops on vital skills like CV and interview techniques. This facilitated the exchange of ideas, knowledge, and valuable insights about career prospects and industry trends.

FIGURE 6: SCREENSHOT OF THE VIRTUAL JOB FAIR

RESEARCH AND SHARING OF INSIGHTS INCREASED KNOWLEDGE BASE

DIGILOGIC researched the topic of smart logistics and ensured that it was shared widely.

For example, the **Trend Radar** continued the conversation with logistics startups and ecosystem actors that were started during the system mapping. It explored which technological, societal, and biological trends are either already visible in Africa or will become relevant. The insights **help to understand the realities of African logistics and inform necessary support offers and regulations for the next decade**.

In **Tech Talks**, experts from the Fraunhofer Institute shared their knowledge on topics like “Big Data Analytics for Smart Logistics”, “Smart Logistics with Blockchains”, or “Artificial Intelligence for Logistics”. These topics are not yet mainstream in logistics on the African continent. Still, the research around the Trend Radar showed that the technologies have a significant potential to change the logistics sector.

DIGILOGIC communicated **through many different channels** (see D 5.6. Final outreach and impact creation activities report) to ensure that the insight from its research reaches a broad audience. The communications team shared all events, activities and the results of research on LinkedIn, X/Twitter and Facebook.

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FIGURE 7: WEBINAR TO SHARE INSIGHTS INTO HOW TO SUPPORT LOGISTICS STARTUPS

In addition, **DIGILOGIC also shared its insights with other stakeholders not yet involved in the logistics sector** to create more support offers for startups and innovators. For example, the project organised a webinar for the DIH of other ICT58 projects on the topic of "Logistics is more than transport – how to create a business model from supporting digital logistics startups" in September 2023.

3.2 COLLABORATIVE PLATFORM

The system mapping discovered that once key stakeholders in critical mile logistics have become aware of their mutual existence and scope of actions, they might be ready for collaboration**. Such collaboration could take place through the intermediary of a third-party-operated platform** to overcome symptomatic trust issues. DIGILOGIC aimed at providing such platforms through an online community, events, and matching opportunities.

AN ONLINE PLATFORM ENCOURAGES EXCHANGE

DIGILOGIC had planned from the beginning to build an e-learning platform to ensure upskilling of people interested in the logistics sector. Yet, it became clear that an **online community** is also valuable to ensure the exchange among experts and learners in the sector. Thus, the platform also received features like groups and chat functionalities. It was also used to conduct the capacity building programme and for the call of applications for the challenges programme. The platform had about 1,800 members in September 2023.

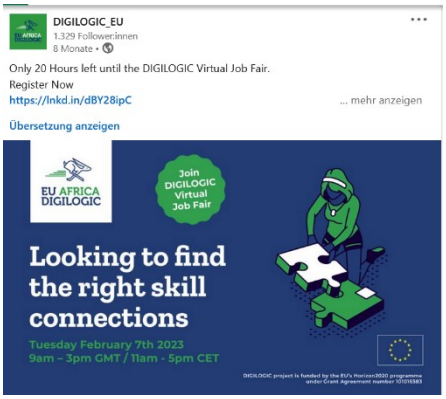

FIGURE 8: BANNER FOR VIRTUAL JOB FAIR

DIGILOGIC had planned to conduct a **Virtual Job Fair** for the graduates of the capacity-building programme. After the system mapping revealed that there was a need for more collaboration in the industry, the event was **opened up for other target groups as well**. In early February 2023, DIGILOGIC conducted a one-day event on the platform MEETYOO for 128 participants, with 26 employers from the transport and logistics space. Notable ones included YomYom Limited, SnooCODE, ShaQ Express and Stride delivery.

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STARTUPS PROMOTE COLLABORATION AND TRANSPARENCY

When DIGILOGIC called for proposals in the challenges programme, it had a **particular interest in supporting startups that address leverage points**. These startups contribute to sustainable system innovation by linking large actors and platforms to smaller actors in the sector. INSTADRIVER, for example, provides an online driver-employer marketplace, a social media platform exclusive for drivers and a SaaS fleet management for transport companies. They foster collaboration and increase transparency in the transport system in Kenya.

MATCHING EVENTS CREATE LINKAGES

DIGILOGIC also **participated in networking** events organised by neutral facilitators like the Cape Town AU-EU Innovation Festival, which also had an "AU-EU Innovation Fair – Meet the innovators". The startups of the Challenges Programme presented partly pitched their companies at the event to connect to the participants of the meeting.

DIGILOGIC also **organised networking events**: during a consortium meeting in Zambiaw with about 40 participants, BHIVE held a networking event where they invited large logistics stakeholders like Mercury Logistics and a large cement company but also startups and innovators in the sector. The focus was on increasing the transparency in the Zambian ecosystem and on linking the actors in the system. Participants of the meeting mentioned how surprised they were about the number of companies in the sector.

FIGURE 9: IMPRESSIONS FROM NETWORKING EVENT IN ZAMBIA

Q&A with established companies

Networking among participants

3.3 FINANCING SMART LOGISTICS STARTUPS

African startups and small innovative players suffer from an overestimation of risk regarding their potential to receive loans or investments. The hope is that once the critical mile smart logistics landscape has acquired more transparency, thus paving the way for clear collaboration potential, smaller innovative actors will access financing opportunities more easily. The system mapping proposed the idea that larger established players working with local startups could provide them with greater credibility potential to banks, thus acting as guarantors during loan processes.

In DIGILOGIC, through discussions with the winners of the challenges programmes, it became clear that **access to funding is indeed one of the biggest hurdles for startups to grow their business**. As many of the startups in the DIGILOGIC programmes were in the early stage, guarantor-entrusted finance seemed to be not the best fit for them. Yet, linkages to finance providers, training on how to pitch and information on how to find the right source of financing were in high demand from the startups.

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KNOWLEDGE OF FINANCING CREATES A STARTING POINT FOR FUNDRAISING

To address these needs, DIGILOGIC facilitated a **peer exchange on the topic of fundraising** in the form of a World Café during the boot camp. The startups and the present ecosystem actors exchanged Questions like “What was your best and most successful /worst fundraising experience?” and “What advice would you like to share with the others?”.

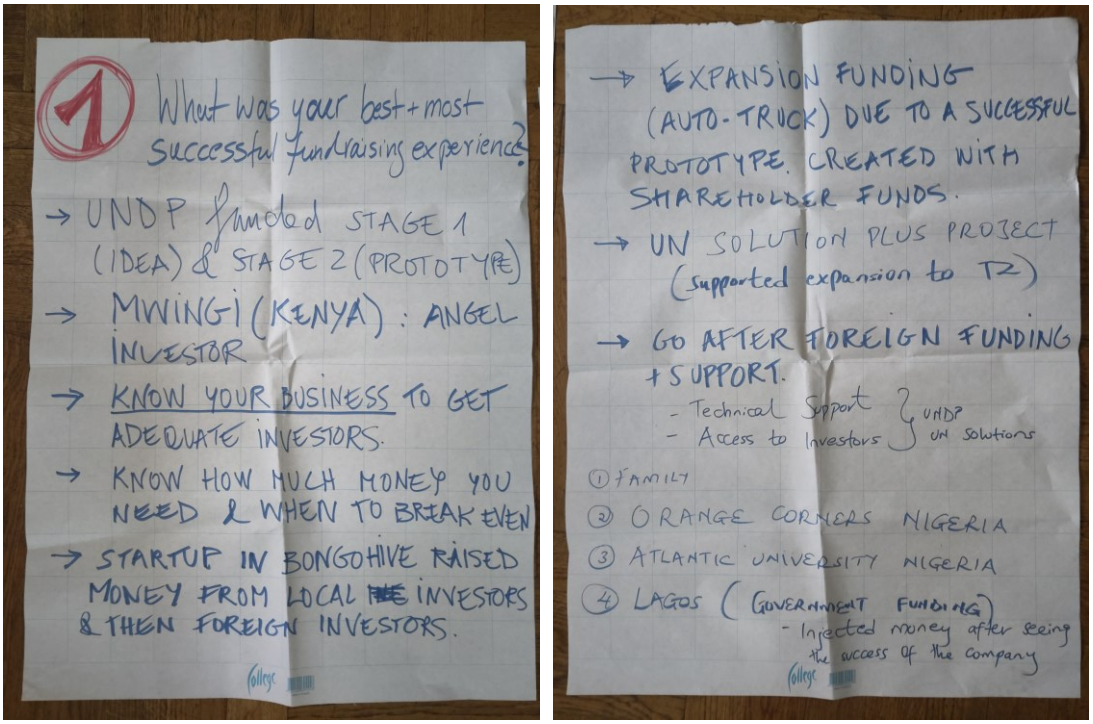

FIGURE 10: EXAMPLE OF REPLIES IN PEER EXCHANGE ON BEST FUNDING EXPERIENCE

PITCH TRAINING PREPARES STARTUPS FOR FUNDRAISING

In preparation for the AU-EU Innovation Festival, the DIGILOGIC startups received in-person **pitch training** (see picture below). "The Art of Pitching" was designed to help entrepreneurs create powerful pitches for investment opportunities. The session focused on guiding and facilitating entrepreneurs in delivering their most effective pitches for their businesses and products. The workshop also included discussions around opportunities, challenges, how collaboration can support innovators and how DIGILOGIC already supported these innovators.

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FIGURE 11: PHOTO OF PITCHING EVENT IN CAPE TOWN

LINKAGES TO POTENTIAL FINANCE PROVIDERS ARE KEY

Linkages to potential investors are vital for accessing finance. As mentioned before in Chapter 3.1, DIGILOGIC also organised a series of webinars with finance providers to introduce them to the DIGILOGIC startups and to give them the opportunity to share their experience with the startups. This series of webinars was not planned from the start of the project, but it was introduced based on the needs of the startups and to work on the leverage points. In December, DIGILOGIC will organise an online demo day where the startups will pitch their business models in front of potential investors.

3.4 STRUCTURING THE INFORMAL SECTOR

Last mile distributors and retailers play a vital role in alleviating global poverty and contributing to the Sustainable Development Goals in remote rural areas. Some initiatives are looking to strengthen their structures into networks. Such endeavours allow distributors to learn from and collaborate, unlock economies of scale (e.g., developing joint training materials or ordering shared containers of products) and implement best practices. This improves their readiness to be integrated into the formal logistics supply chain and leverage digital solutions for inventory, customer management, etc.

CO-CREATION ON THE TOPIC RESULTS IN BUSINESS IDEAS

DIGILOGIC has dedicated two co-creation labs to the challenge of how to collaborate with informal retailers. The first one looked into the challenge of how to digitise last mile distribution in remote areas, and the second in matching supply and demand in informal retail supply chains (see post for the labs below). In both labs, participants created business ideas to address these challenges and how to link the formal and the informal sectors. Approximately 60 people, including Lab participants, PP staff and entrepreneurs in the logistics sector, were involved in the two labs.

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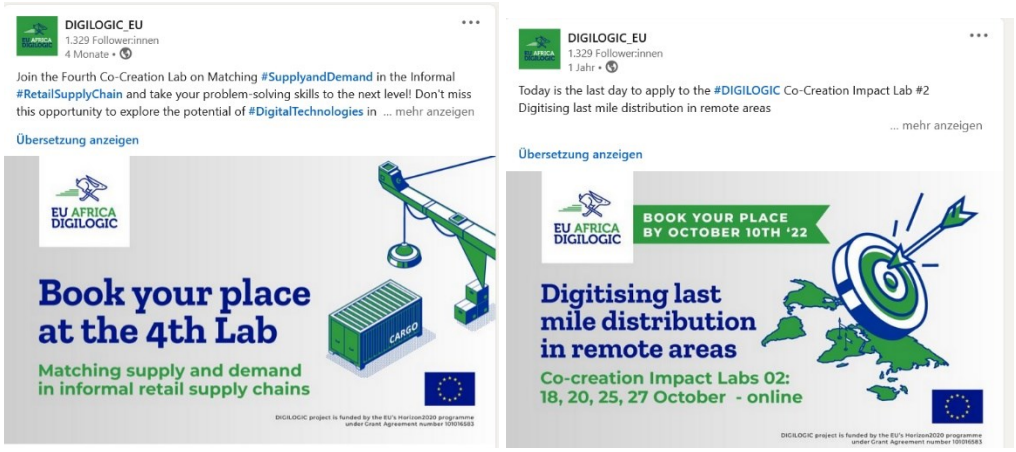

FIGURE 12: EXAMPLES OF CO-CREATION LABS ON THE TOPIC OF INFORMAL LOGISTICS

SOME DIGILOGIC STARTUPS LINK FORMAL AND INFORMAL SECTOR

Several of the **startups in the DIGILOGIC Challenges programme link the formal and informal sectors**.

For example, Mwingi serves informal retailers. The company is a franchise business that serves rural communities across Kenya with essential products via reliable distribution channels and an IT-backed business model. Each franchisee operates her shop, which Mwingi stocks with fast-moving consumer goods.

Radava targets informal farmers: It provides a functioning agricultural commodity exchange market, well-equipped warehouses, and farmer-tailored credit facilities to (informal) smallholder farmers across Sub-Saharan Africa. Thus, they can participate in formal markets and benefit from higher margins and turnover.

SUPPORT FOR KEY ECOSYSTEM ACTORS STRENGTHENS THE SECTOR

DIGILOGIC also collaborated with the Global Distributor Collective (GDC), which supports informal retailers on multiple occasions: GDC presented their work during one of the co-creation labs, DIGILOGIC shared training opportunities (see on the right) and contributed to research conducted by the GDC by giving an interview on logistics trends and by reviewing the first draft of the report.

FIGURE 13: POST ON TRAINING FOR INFORMAL RETAILERS

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3.5 STRONGER USE CASES AND BUSINESS MODELS

The system map revealed that it is necessary to bridge the gaps between actors along the smart and physical critical mile logistics to showcase more robust use cases and business models collaboratively. When successful startups become visible, the smart logistics narrative becomes one where the benefits outweigh the risks.

STRENGTHEN DIHS TO SUPPORT SMART LOGISTICS BETTER

The leverage points informed the design of the **peer exchange among the DIH** of the DIGILOGIC consortium. In 2021, they met online to exchange best practices in supporting innovation and startups. The peer exchange discussed how to create transparency, how to foster collaboration, how to specifically support startups in critical mile logistics and how to up and re-skill entrepreneurs and potential staff members (see overview of topics below).

	TRANSPARENCY	COLLABORATION	LAST MILE DISRUPTION	DIGITAL UPSKILLING
Topic details	Communication, access and reach of support services offered by DIHs	Support services aimed to foster collaboration and networking	Business models for smart logistics solutions at the critical mile	Digital upskilling and re-skilling for entrepreneurship and innovation
Guiding question	How do we provide effectively up-to-date, accessible information on funding opportunities, entrepreneurial programs and other support offers?	How do we create and promote collaboration among corporates, entrepreneurs, public entities and other innovation ecosystem stakeholders?	How do we promote and support innovative business models for smart logistics at the critical mile?	How to leverage current DIHs digital upskilling and re-skilling activities?

TABLE 1: PEER LEARNING TOPICS

The rich insights were collated in Deliverable D3.2 to make them available to the broader public. The insights and especially the recommendations of the "**Design Options Paper" also served as a guideline for the design of DIGILOGIC activities**.

To share insights, especially on the support of logistics startups**, DIGILOGIC also organised and held a webinar together with AEDIB|NET in September 2023.** The webinar was directed at DIHs from Europe and Africa and opened up opportunities for them to foster, support and collaborate with startups, SMEs and corporates from the logistics industry.

As universities also play a pivotal role in supporting innovation in smart logistics, DIGILOGIC will **organise a focus group with selected African universities to discuss how they can support logistic startups** in November 2023. The online exchange will also discuss what framework conditions are conducive to supporting their efforts and what they would need to fulfil this role even better.

SUPPORT STARTUPS TO IMPROVE THEIR BUSINESS MODELS AND BECOME SUCCESSFUL

The system map informed the design and the selection criteria for the DIGILOGIC Challenges Programme. **The programme focused on highly individualised support for smart logistics companies by providing technical advice and business model support.** The twelve winning teams went through a year-long programme of mentoring support by Fraunhofer IML/DHM, VTT, MEST and BHIVE.

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To ensure that the supported startups have a higher chance of surviving in the market – the usual survival rate being around 10 per cent - and becoming successful, VTT reviewed methods that are used to manage startups' survival and growth. VTT observed that extant methods do not focus startups' attention directly and persistently on survival and growth in changing environments. Hence, it was concluded that a new method is needed that focuses startups' attention directly and persistently on survival and growth.

It was apparent that such a method needs to be useful for startups with diverse backgrounds that use many different technologies in many types of changing environments. For example, some DIGILOGIC startups like Mwingi employ computer programmers to carry out coding and vehicle startups like Autotruck employ welders to do metal work. Furthermore, very diverse startups can be involved with digital logistics in Africa and Europe and can interact with organisations throughout the world, such as potential investors. To address this vast geographic and process diversity, VTT referred to natural science research concerned with the first principles of survival and growth in changing environments.

The new method developed by VTT is based on natural science findings about survival and growth in changing environments depending on living things being adaptable, stable systems. In particular, systems that can adapt to external changes while maintaining internal stability. As reported in more detail in D4.4, the method developed by VTT has been applied to plan and monitor the mentoring provided to the twelve startups in DIGILOGIC.

The **twelve startups have been widely showcased on DIGILOGIC's social media and other communication channels** to talk about their business models, their improvements and their success. On multiple occasions, they have been linked to other ecosystem actors to increase the collaboration among them.

UP- AND RE-SKILL TALENTS FOR SMART LOGISTICS

One issue that is relevant to creating successful businesses is talents with the right skills and expertise. The system mapping revealed that the skills are missing. DIGILOGIC had planned from the beginning to offer eLearning courses, a capacity-building course for youth and the co-creation labs as a learning opportunity.

The system map influenced the topics that were included in the eLearning courses on the DIGILOGIC platform, like, for example, "Technological Innovations: Improving Evaluations and Implementation".

FIGURE 14: EXAMPLE OF ELEARNING COURSES

The system map also influenced the topics of the Capacity Building Programme: DIGILOGIC did the training in collaboration with existing startups and logistics providers to ensure that the skills are in demand from the labour market. The two companies, Solartaxi and Afridelivery, provided their businesses as a case study for the courses.

The training also contained both entrepreneurship and logistics skills to enable the graduates to also work as micro-entrepreneurs as part of larger platforms. This training taught them some basic entrepreneurship skills like financial literacy, design thinking and communication.

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4 LEARNINGS

Towards the end of the projects, the following learnings were gathered during the last 2.5 years on how to ensure that systemic change is planned, implemented and scaled.

System work creates interconnections between activities

The systems approach enabled DIGILOGIC to leverage individual activities and connect them with each other. Everybody worked towards the same goal: Improving the system for critical mile logistics gave DIGILOGIC an overarching framework. This approach enabled the consortium partners to include the learnings in the upcoming activities, build on the network and the gained expertise.

Ensure a focussed scope

DIGILOGIC focused its scope on "critical mile logistics" as this topic presented many opportunities for innovation in the smart logistics space. It turned out to be a good decision because the activities could be focused on topics like cold chain, inclusion of informal retailers and last-mile delivery. The DIGILOGIC network around the scope was then closely knitted, and many activities were planned to impact the leverage points of the system.

The geographical scope of DIGILOGIC was also limited to some countries in Africa: Ghana and Nigeria in the West, Kenya in the East, and Mozambique, South Africa, Namibia, Zimbabwe, Malawi and Zambia in the South of the continent. This helped to focus the attention on some national ecosystems and a limited amount of actors.

Use funded projects to develop prototypes

DIGILOGIC understood well what it would take to change the system of critical mile logistics at the beginning of the project. It was also evident from the onset that it would take longer than three years to change the system radically. Thus, DIGILOGIC picked the approach to develop prototypes of formats, test them, gain insights, create a network, share the learnings and scale them in collaboration with the actor network. Thus, the change process can continue after the funding for DIGILOGIC.

For this approach, it was great to have some flexibility to develop and test formats like the tech talks, which were then transformed into individualised coaching, which was regarded more valuable by the startups.

Collaboration and delegation

DIGILOGIC explored the actor landscape of the critical logistics sector in its core countries because system work is always the work of all stakeholders involved in the system. Thus, it was necessary to establish relations with the stakeholders. During the programme, DIGILOGIC collaborated with development partners, investors, policymakers, public actors and ecosystem support organisations to improve the ecosystem for innovators in the smart logistics space. This collaboration created trust and familiarised the other actors with formats developed by DIGILOGIC.

At the end of the project, DIGILOGIC will need to delegate and hand over the formats and contacts to its collaborators, which will continue the community and use the formats developed by DIGILOGIC. They will undoubtedly adapt it to their specific need, but that ensures increased impact. In addition, the consortium members will continue using the formats and will continue collaborating with the network established during DIGILOGIC.

Work on one challenge at a time

In the system mapping, DIGILOGIC uncovered many system challenges and at least five core leverage points. It was clear from the start that it would be impossible to work on all of them at the same time.

Thus, DIGILOGIC concentrated on one challenge at a time. DIGILOGIC started with creating knowledge products and increasing awareness on the topic of smart logistics in Africa. That enabled DIGILOGIC to launch activities

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like the capacity building programme and the Challenges programme. In the latter, DIGILOGIC focused on supporting the business models and increasing their visibility, which went hand in hand. Only after having supported the startups for some time did it make sense to introduce them, for example, to investors and corporate partners.

It is good to take a bottom-up approach

Despite the fact that system approaches require looking at the whole system, take a bird's eye perspective, and that the activities will impact the whole system, it is still advisable to also work with individual actors like startups or DIH. They know their needs and help to shape the system work.

DIGILOGIC worked a lot with startups, innovators and entrepreneurs directly to support their businesses, as they are the main building blocks of the smart logistics sector. This helped to create impactful activities and ensure that they were relevant to the beneficiaries in the system

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