EU AFRICA
DIGILOGIC

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Trend Radar
Logistics in Africa

Preface

Digital transformation can become a catalyst for economic growth and development. One area where this transformation has large potential is the logistics industry. Traditional supply chain processes are being revolutionized by digital technologies, leading to the emergence of digital logistics. In the past decades, research and industry have increasingly dealt with the current developments, challenges, and trends within logistics on a global level. However, the results are often not directly applicable to the logistics industry in Africa. Thus, DIGILOGIC carried out multi-method research in order to develop a logistics trend radar that is specific to Africa.

The logistics industry in Africa stands at the cusp of an unprecedented transformation, driven by a convergence of societal, technological, and biological trends. As we venture into the next decade, the landscape of logistics in the continent will witness profound changes, reshaping supply chains, redefining business models, and revolutionizing the way goods and services are transported and distributed. In following this path, it is interesting to note that implementation of new digital technologies is not a top priority for logistics in Africa. Rather, new and old digital and physical technologies are being combined to obtain the best outcomes possible within the contexts for logistics in Africa. This is also reflected for example in the high ability of African start-ups to cope with existing challenges such as the provision of minimal infrastructure, climatic challenges as well as societal fragmentation across Africa.

Accordingly, societal issues that hinder logistics in Africa need to be addressed by the respective trends so that logistics can be carried out in challenging contexts. To represent occurring trends related to the prevalent environmental and climatic challenges, the DIGILOGIC Trend Radar includes the third dimension: biological trends. In a world where uncertainties are introduced into global logistics unpredictably by extreme weather events and social conflicts, valuable insights for the future of European logistics could be gained from ongoing analyses of emerging logistics solutions in Africa.

With this Trend Radar DIGILOGIC aims to be a guiding light for industry stakeholders, policymakers, and innovators as they navigate the dynamic and complex terrain of logistics in Africa. Drawing upon comprehensive research and expert insights, we have identified and analyzed the key trends that are set to shape the industry over the next ten years.

Nevertheless this research represents only the starting point for others to build and expand on. We invite you to review the results of the Trend Radar presented in this publication and hope to inspire, spark you interest and raise awareness for the vast potential of the logistics industry in Africa.
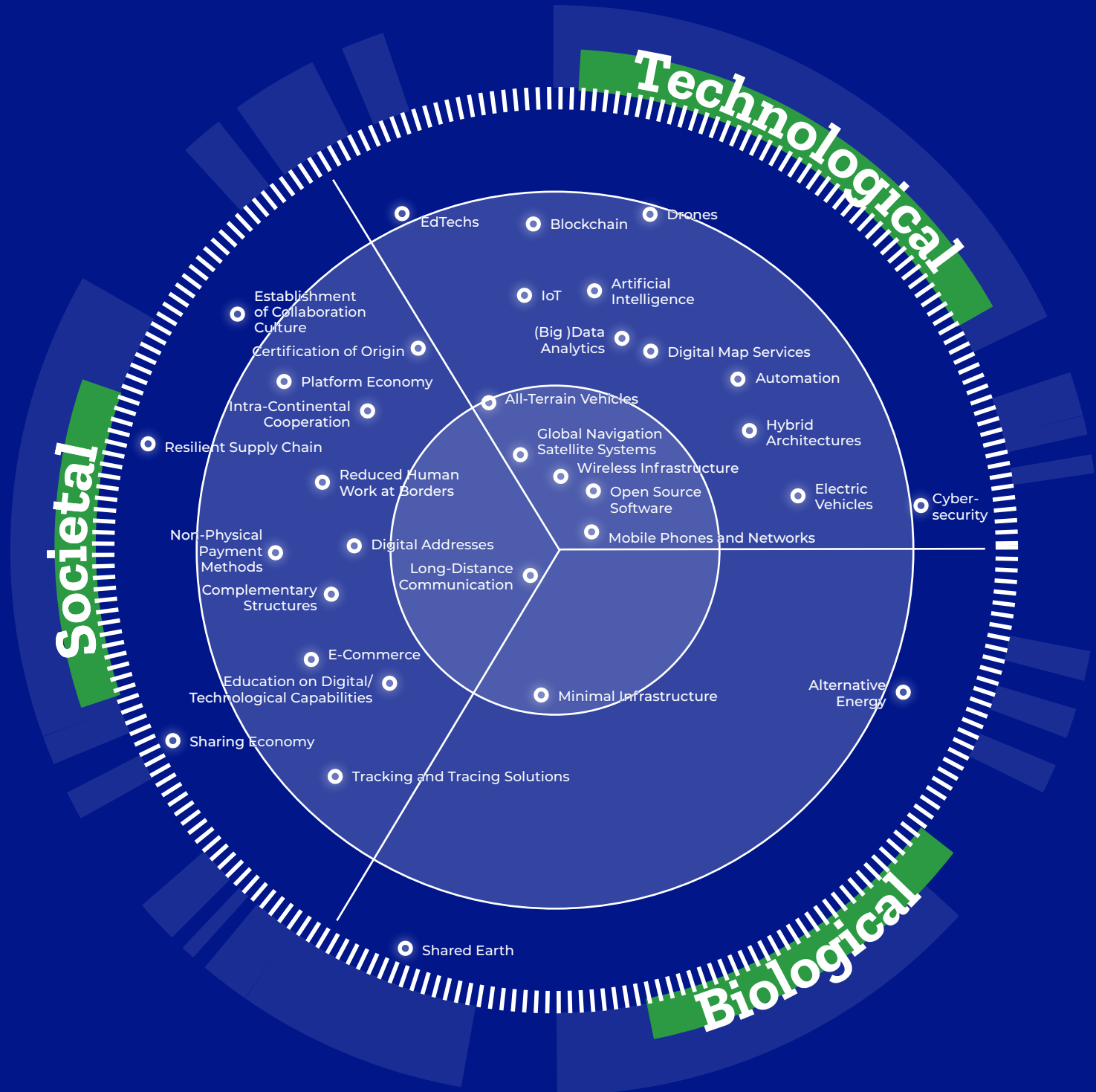
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Trend Radar

Technological

Societal

Biological

Time until widespread implementation

- Today
- < 5 years
- > 5 years

Technological
- EdTechs
- Blockchain
- Drones
- IoT
- Artificial Intelligence
- (Big)Data Analytics
- Digital Map Services
- Automation
- All-Terrain Vehicles
- Global Navigation Satellite Systems
- Hybrid Architectures
- Wireless Infrastructure
- Open Source Software
- Electric Vehicles
- Mobile Phones and Networks
- Cyber-security
- Alternative Energy

Societal
- Establishment of Collaboration Culture
- Certification of Origin
- Platform Economy
- Intra-Continental Cooperation
- Resilient Supply Chain
- Reduced Human Work at Borders
- Non-Physical Payment Methods
- Digital Addresses
- Long-Distance Communication
- Complementary Structures
- E-Commerce
- Education on Digital/ Technological Capabilities
- Minimal Infrastructure
- Sharing Economy
- Tracking and Tracing Solutions

Biological
- Shared Earth

Definition of trends

SOCIETAL TRENDS

Today:

⚙ Long-Distance Communication:
The trend of mobile connectivity enabling (real-time) communication between individuals or entities located in distant geographical locations.

< 5 years:

⚙ Certification of Origin:
The practice of verifying and providing official documentation for the origin of products with the help of digital technologies such as Blockchain; complying with trade agreements and regulations.

⚙ Complementary Structures:
Exercising personal agency through skills and ingenuity. For example, complementing knowledge of local weather patterns with publicly available weather forecast information to deal with changing climatic conditions.

⚙ Digital Addresses:
The use of digital location-based identifiers (e.g., geocodes or unique alphanumeric strings) to improve accuracy and efficiency in navigation and delivery services.

⚙ E-Commerce:
The widespread adoption of electronic platforms and online marketplaces for buying and selling goods and services, revolutionizing the way commercial transactions are conducted.

⚙ Education on Digital/ Technological Capabilities:
The provision of education and resources that equip individuals with the necessary skills and knowledge to navigate and leverage digital technologies effectively.

⚙ Intra-Continental Cooperation:
Enhanced collaboration and partnerships between African countries to foster regional development, trade, and economic growth; fostered especially through the African Continental Free Trade Area (AfCFTA).

⚙ Non-Physical Payment Methods:
The increasing prevalence of digital and contactless payment options, allowing transactions without the need for physical cash.

⚙ Platform Economy:
The emergence of digital platforms that facilitate the exchange of goods, services, or information between individuals or businesses, often disrupting traditional industries and creating new opportunities.

Reduced Human Work at Borders:

The adoption of automated and digital systems at international borders to streamline customs processes and reduce the need for extensive manual interventions.

Tracking and Tracing Solutions:

Implementation of sophisticated digital tools and systems to monitor and trace the movement of goods, enhancing transparency and efficiency in the supply chain (e.g., applied in cold chain logistics).

> 5 years:

Establishment of Collaboration Culture:

The shift towards fostering an economic environment that encourages teamwork, cooperation, and knowledge-sharing among geographic regions, businesses, supply chain actors and employees.

Resilient Supply Chain:

The adaptation of supply chain management practices to enhance flexibility and responsiveness, ensuring continuity and mitigating disruptions in the face of unforeseen challenges or crises.

Sharing Economy:

An economic model where individuals and businesses share, rent, or borrow goods, services, or resources instead of buying and owning them.

TECHNOLOGICAL TRENDS

Today:

Global Navigation Satellite Systems:

A network of satellites that enables precise positioning and navigation on Earth (e.g., Galileo, NAVSTAR GPS, GLONASS or Beidu) and the accompanying GNSS devices, commonly used in GPS technology for location-based services.

Mobile Phones and Networks:

Portable communication devices and interconnected radio network infrastructure distributed over land areas, each served by at least one fixed-location transceiver (cell site) to allow wireless communication and data transfer among users.

Open Source Software:

Software with its source code made accessible to the public, allowing anyone to view, modify, and distribute the program freely, encouraging collaborative development and innovation.

Wireless Infrastructure:

Widespread implementation of hardware such as access points, antennas, cabling, power, and other network hardware for the deployment of a communication network that facilitate wireless connectivity and transmission of data.

< 5 years:

All-Terrain Vehicles:

Vehicles designed to operate on various types of terrain, capable of navigating through challenging environments and rough landscapes.

Artificial Intelligence:

The simulation of human intelligence in machines, enabling them to learn, reason, and make decisions, often used to solve complex problems, and optimize processes.

Automation:

The use of technology and machines to perform tasks and processes with minimal human intervention and increasing efficiency, reducing the need for manual labor (e.g., automation of production processes, customs automation at the borders etc.).

(Big) Data Analytics:

The process of analyzing large volumes of

data to derive valuable insights, patterns, and trends, often using sophisticated algorithms and tools to make data-driven decisions.

⊙ Blockchain:
A decentralized digital ledger technology that enables transparent and tamper-proof record-keeping of transactions, used within cryptocurrencies and for the tracking of transactions within supply chains.

⊙ Cloud:
A network of remote servers used for storing, managing, and processing data and applications over the internet, offering scalable and on-demand computing resources.

⊙ Digital Map Services:
Online platforms and applications that provide interactive maps and geospatial information, facilitating navigation, location-based services, and geographic analysis.

⊙ Electric vehicles:
Vehicles powered by electric motors, utilizing rechargeable batteries as an alternative to traditional internal combustion engines, contributing to reduced emissions and environmental impact (e.g., application in private transport sector, electrification of supply fleets etc.).

⊙ Hybrid Architectures:
System designs that combine multiple technologies, platforms, or approaches technologies with origins from different decades to create efficient and adaptable solutions for specific challenges.

⊙ IoT (Internet of Things):
A network of interconnected physical devices, sensors, and objects embedded with technology that can collect and exchange data over the internet (e.g., applied in cold chain logistics in the form of temperature sensors).

> 5 years:

⊙ Cybersecurity:
Measures and practices to protect computer systems, networks, and data from unauthorized access, cyber-attacks, and data breaches.

⊙ Drones:
Unmanned aerial vehicles used for various purposes, such as aerial photography, surveillance, delivery, and scientific research.

⊙ EdTechs:
Education-enabling technologies and platforms that utilize digital tools to enhance teaching and learning experiences, sometimes integrating IoT or Artificial Intelligence.

BIOLOGICAL TRENDS

Today:

⊙ Minimal Infrastructure:
Solutions and technologies designed to function effectively with limited or basic infrastructure, often implemented in remote or resource-constrained areas.

> 5 years:

⊙ Alternative Energy:
Renewable energy sources and technologies such as solar or wind energy that offer environmentally friendly alternatives to conventional fossil fuels.

⊙ Shared Earth:
The concept of collectively preserving and responsibly using the Earth's natural resources and ecosystems for the benefit of present and future generations.

Further Information

https://digilogic.africa/trend_radar/

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