DIGILOGIC INSIGHTS #7: An ideological shift towards digital technologies

The DIGILOGIC Team talks to Angelica Coll, research assistant in the logistics department at the Technische Universität Berlin.

Angelica Coll tells how digitalization will add value to logistics networks in Africa.

The digital solutions

As Angelica Coll sums up: “Logistics is the fabric that holds international trade together, along with everything that we buy and sell.” She believes that logistics should be viewed in the wider context of humanitarian support which is how she came to write her Master’s thesis about ways of avoiding food loss in the supply chain in Tanzania. Coll’s expertise also extends to working on a project about integrating more practice-oriented content into logistics education at Addis Ababa University in Ethiopia, more of which later. Her PhD research focuses on how digitalization can create more efficient logistics networks in sub-Saharan Africa.

Coll suggests using a System Applications Product (SAP) or other Enterprise Resource Planning (ERP) software would go some way to helping SMEs find solutions. She also welcomes initiatives to connect key groups, such as farmers, through SMS to keep them updated on current market prices. Other solutions include improving cold-chain logistics and introducing user-friendly interfaces so truck drivers, another important sub-sector in the industry, can be promptly matched to jobs from local transporters. “When solutions involve stakeholders along the entire supply chain from producers and growers, to buyers and transporters to consumers and government, trust is built for the future.”

Coll would welcome moves to see African countries benefit far more from their products. Ethiopia produces world-class coffee, which is exported as beans. As a result, much of the added value is handed over to European countries which profit from the roasting, packaging and branding processes. If companies from the country of origin controlled all these stages, there would more control, more jobs, and more revenue for the producer country.

Coll emphasizes how digitalization technologies would maintain much more efficient production. She believes that “the ideological shift will start to happen” once people realise the benefits of technology through more production and higher revenue.

The challenges

Coll’s focus has been on Ethiopia, Tanzania, Kenya, and Rwanda. In November 2022, she helped run a workshop about the barriers that the logistics sector faces in the take-up of digital technologies. The main challenge is the scale of segmentation across the different sub-sectors within the logistics industry. As she explains: “If you take food supply chains you will have many farmers. Then the intermediaries who go from farmer to farmer buying their products. These intermediaries sell goods on to other intermediaries who might be, for example, urban traders who will then sell the products on again to processing companies or directly to their own customers. And this is just the national supply chain.”

As a result, communication between the various parties is often inefficient and ineffective. A key issue is that farmers often do not have access to smartphones, so not only are they excluded from following competitive pricing for their goods, say coffee, they will not know how much the current value of a coffee crop is worth. The farmers cannot then build on that knowledge to improve their own revenue or even adapt accordingly.

The challenge with digitalization for many start-ups and SMEs is the upfront cost. And because they often do not have access to seed financing to take the pressure off the early development stages, it can be harder to appreciate the added value that digital technologies bring. An

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additional problem, Coll explains, is “that even when companies can buy the technologies, they are not aligned with their specific requirements, both practically and culturally.”

She cites Ethiopia as an example, where in addition to English, the main languages are Amharic and Oromo, which are not easily found on digital platforms. This means that when digital software is introduced, many key workers are not able to use it because they do not speak English, and it is not possible to adapt the technology to Amharic or Oromia. In turn, this means that there are not enough skilled workers on the software side in Ethiopia to offer solutions for Ethiopian companies.

Many African companies prefer to use paper to communicate. “While some companies do an excellent job tracking food losses on paper, it means that, from a digital perspective, the use of paper prevents accurate analysis and data collection, Coll explains. “You cannot use an algorithm to understand if there is a link between food losses and factors such as temperature and humidity. So, while it is possible to discover how much revenue is being lost, the core problem of food loss is still not being tackled.”

The regulatory framework is another issue that requires attention, Coll says, not least because policies differ greatly between Rwanda, Ethiopia and Kenya. While the working flow for controlling exports and imports has been eased at some seaports, policies to support companies to introduce their own digital platforms within countries have yet to be introduced.

Coll stresses the cultural aspect when considering the impact of digitalization. Many workers are afraid of being tracked by employers, while customers are wary of buying online in case they are scammed or the goods cannot be returned. These problems are often overlooked, observes Coll, but they can be resolved through robust consumer rights regulations.

Looking to the future

The logistics sector is inherently practice-oriented says Coll, “Because we handle what is current and because whatever cannot be implemented is not relevant.”

Over the past three years she has worked on improving logistics education at Addis Ababa University. She saw that in Africa logistics issues are perceived from a “very European-Western perspective. All the research, teaching content and case studies mostly focused on Europe.” Many of the important issues, however, are inherently African such as accessibility to extremely remote areas.

To improve this, Coll mentions a project which offered two students from Ethiopia the chance to study in Berlin to learn first-hand how logistics are done in Germany; while two German students went to Ethiopia. The programme continues to be a resounding success and with a far greater appreciation of what can be done, including adoption of the “super important digital technologies” that can help tackle the root of a problem including monitoring the temperature and humidity of food products. Coll observes that African culture is a very problem-solving oriented, “But by tackling the root of the problem, you can start generating a sustainable impact for your company.”

Drones that deliver medical equipment and medicine to remote areas in Rwanda and other countries are an important development and there are opportunities too for leapfrogging. Coll suggests, as an example, that “it would be better to give everyone a smartphone or iPhone rather than trying to install landlines across the continent.

In Africa, people are always trying to maximize their revenue and the impact on their communities for everyone to have a piece of the cake. This is something that Western companies are wary of,” she adds. “They don't like it if two people do the work of one, but that's the necessity because there are no other jobs.”

This is why Coll’s vision involves attracting many more skilled digital workers into the logistics sector that will help build more sustainable and value-added businesses that benefit Africa.

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