Digital Agri Hub

To diversify or not to diversify? Debating one of the dilemmas in digital solutions for agriculture.

Summary of the 5th e-conversation, 2nd series

Collaborating organisations

Hosted on the Digitalisation for Agriculture or **D4Ag dgroup**, this eConversation has been run by the **Digital Agri Hub** in partnership with the **College of Agriculture**, Tennessee State University, USA and **Africa Goes Digital** (AfGD), an association of digital operators.The exchange has been preceded by a webinar where **Charis UAS**, **Farmerline**, **Farmforce** and **SOWIT** shared their experiences in diversifying their digital service portfolio.

Starting date	Closing date	No. of posts	New members
17 June 2024	7 July 2024	30	6

Some stats

eConversation framework:

Digital service providers operating in the agricultural sector often find themselves at a crossroads, faced with the decision of whether to stick to their specialized niche or to diversify their service offerings within agriculture and eventually branch out to other sectors. This strategic choice can significantly impact their market positioning, growth potential and resilience.

Agriculture is a field loaded with unpredictability. Weather conditions, pest outbreaks, and crop husbandry and market fluctuations can drastically affect agricultural returns and, consequently, the demand for digital services tailored to farming. Small-scale producers often lack the means to meet the cost of digital services, unless organised in cooperatives or associations, thus emulating the conditions existing on large-scale farms. By branching out into other sectors, digital service providers can buffer themselves against the sector-specific risks inherent in agriculture. Economic cycles influence different sectors in various ways, so a downturn in agriculture might be counterbalanced by stability or growth in another sector, providing a safeguard against volatility.

Moreover, the technological advancements developed for agriculture—such as remote sensed data analytics, IoT and artificial intelligence - are often versatile and can be repurposed for other sectors like logistics, environmental monitoring, credit scoring, or smart city infrastructure. Often diversification leads to bundling of solutions within the agricultural -, or perhaps between different sectors.

- What drivers may influence the decision of agricultural digital service providers to diversify within agricultural and / or into other sectors? — Q1
- How can digital service providers assess the alignment between their current agricultural offerings and potential diversification opportunities? — Q2
- Do you have examples of digital solutions developed for agriculture that have been successfully repurposed for other sectors? — Q3

Summary of the e-conversation (ChatGPT assisted)

Drivers and strategies influencing diversification

In light of evolving technological landscapes, shifting market demands, and changing economic conditions, digital agriculture service providers must consider nuanced strategies for diversification. Technological innovations, such as artificial intelligence (AI), the Internet of Things (IoT), and precision agriculture, are revolutionizing traditional farming methods. These advancements enable, among others, more effective resource management, yield prediction, and disease prevention, offering service providers opportunities to diversify into high-tech offerings both within and outside the agricultural sector.

Strategic diversification involves a careful planning process to explore new market opportunities without losing focus on core competencies. This may include applying existing technologies to new markets or developing new products that complement existing services. The success of diversification strategies often hinges on local contexts, including cultural preferences, economic conditions, and regulatory environments. Tailoring strategies to fit these local nuances is crucial for their success and acceptance.

As an example, consumer preferences for sustainable and organic products are reshaping market demands. Economic drivers, including cost reductions, efficiency improvements, and new market opportunities, encourage providers to diversify their service portfolios. This might involve offering support for organic farming, enhancing supply chain transparency solutions, and exploring other innovative avenues. Diversification serves as a strategic response to the inherent risks associated with agricultural dependency, such as market fluctuations and environmental challenges. By diversifying, companies can stabilize their income streams and reduce vulnerability to sector-specific downturns, thereby enhancing the resilience of their business models.

While diversification can mitigate risks and open new revenue streams, it also presents challenges such as the need for additional resources and capabilities to meet increased operational complexity intricacies of technology implementation, deployment, project management, and ultimately the needed profitability for the service providers. These challenges can strain a company's focus and resources. Many companies have successfully diversified their offerings, for instance, by integrating vertical solutions that span from production to retail including bundling of products. These success stories provide valuable lessons on balancing expansion with maintaining a focus on core business areas.

Expanding the customer base through diversification allows companies to tap into new segments, potentially increasing their market share and revenue. However, this requires a deep understanding of new customer needs and market dynamics. Maintaining high ethical standards and actively engaging with stakeholders is essential, especially as companies expand into new areas. This includes ensuring data privacy, securing stakeholder buy-in, and maintaining transparency in operations.

The dynamic nature of digital agriculture necessitates ongoing research into diversification strategies to ensure they remain effective and aligned with global trends and innovations. Future studies could focus on the long-term outcomes of diversification and its impacts on sustainability. By considering these factors, digital agriculture service providers can better navigate the complexities of diversification and position themselves for sustained success in a rapidly changing environment.

Evaluating the alignment of a company's digital ag offerings with potential diversification opportunities

To begin with, providers should thoroughly assess their core competencies. Identifying what makes their Agtech solutions unique can reveal new sector opportunities. Additionally, understanding market demand is crucial. Engaging directly with clients, especially farmers, helps identify real needs and pain points that existing technologies in other sectors could address.

The adaptability of current technology is another important factor. Digital solutions are often flexible and can be repurposed for various applications. Balancing opportunities with risks is also essential. While staying within the agricultural sector might seem safe, it still suffers from unpredictable factors like changing climate, pests and market fluctuations to mention a few. Diversifying could offer stability but brings its own challenges.

Maintaining strong relationships with existing customers is key. Their feedback can uncover new needs within agriculture or reveal potential crossover opportunities.

There is no one-size-fits-all approach; some providers might thrive by focusing solely on Agtech, while others might succeed by expanding into multiple sectors. The critical strategy is to leverage core strengths and remain responsive to market needs.

Digital service providers should judiciously plant new seeds for growth based on their expertise and market insights. Leveraging agricultural know-how and strong client connections can guide smart, strategic expansion, all while carefully considering the complexity of the technology involved.

Digital ag solutions successfully repurposed for other sectors

In the context of the eConversation no examples were provided for digital agricultural solutions repurposed to serve other sectors. Nonetheless there is an understanding that this is a path taken by providers like Charis UAS. Conversely agriculture benefitted from cross-pollination from other sectors. Examples include farm management systems derived from commercial ERP systems, weather forecasting applications used for optimizing farming schedules and urban weather prediction, and IoT-based soil sensors that enhance farming practices and manage urban green spaces in smart cities.

Highlights

- Technological Advancements: Rapid advancements in AI and IoT drive diversification by enabling innovative solutions for specific agricultural challenges.
- Risk Mitigation: Diversifying across different sectors helps mitigate risks related to agricultural volatility, stabilizing income streams and enhancing business resilience.
- Vertical and Horizontal Diversification: Digital service providers in agriculture explore vertical diversification by enhancing their range of services within the agricultural sector, and horizontal diversification by extending their technological expertise to other industries, effectively broadening their market reach and reducing dependency on a single sector.
- Market Demands and Economic Considerations: Market demands and economic environment changes significantly influence diversification, allowing providers to expand their customer base and tap into new revenue streams.

Recommendations resulting from the exchanges

Reflecting on the discussions and insights from the moderators, diversification strategies in digital agriculture extend beyond digital service providers to encompass a wide array of stakeholders who play critical roles in the digital agriculture ecosystem. To cultivate an environment that supports successful diversification strategies, thereby enhancing collaboration, driving strategic growth, and improving the livelihoods of farmers, we recommend the following:

For Digital Service Providers: Digital service providers should invest continuously in research and development to drive innovation and maintain a competitive edge, particularly in cutting-edge technologies such as AI, IoT, and data analytics tailored to agriculture. Regular, detailed market analyses are crucial to identifying emerging trends and evolving customer needs, guiding strategic decisions on diversification within or beyond agriculture. Providers should focus on developing customizable and scalable solutions that cater to varying market demands and customer segments, ensuring that new technologies can be adapted for use in diverse environments.

For Farmers and Agricultural Cooperatives: Farmers and agricultural cooperatives should be actively involved in the development and testing phases of new agricultural technologies to ensure that these innovations are practical and meet actual farming needs. This will facilitate the adoption of new digital technologies improving productivity and sustainability on farms. It is also important that digital service providers and policymakers and government agencies create conditions that facilitate farmers' continuous education and training on emerging technologies so that they better understand and efficiently implement them in their agricultural practices.

For Policymakers and Government Agencies: Policymakers and government agencies need to create and maintain regulatory environments that support innovation and responsible diversification in digital agriculture. This includes providing financial incentives for ventures in digital agriculture, especially for startups that bring innovative and sustainable solutions to the field. Policies should also encourage the adoption of digital solutions that promote sustainability, offering guidelines and incentives for environmentally friendly agricultural practices.

Shared Resources

Cited literature:

- _____. 2021. Agricultural “Platforms” In A Digital Era: Defining the landscape. ISF Advisors
- Ginige, A., De Silva, L. N., & Samaraweera, G. C. (2024). Digital agrifood ecosystems: Digital platforms for inclusive, efficient, sustainable food systems to achieve food security. In Handbook on Public Policy and Food Security (pp. 234-246). Edward Elgar Publishing
- Hernandez, K., Flynn, J., He, J. & Alsahi, H. 2024. Towards digital inclusion in rural transformation. FAO. Rome
- Tsan, Michael; Totapally, Swetha; Hailu, Michael; Addom, Benjamin K. 2019. The Digitalisation of African Agriculture Report 2018–2019. Wageningen, The Netherlands: CTA/Dalberg Advisers

Cited websites / webpages:

- Charis UAS www.charisuas.com
- Farmerline www.Farmerline.co
- Farmforce www.Farmforce.com
- Gram Disha Trust: https://gramdisha.org/blog
- Kilimo: http://www.kilimo.io
- Sowit www.sowit.co
- Yielder: http://www.yielder.org

Cited Multimedia

- To diversify or not to diversify? Debating one of the dilemmas in digital solutions for agriculture Webinar recording: https://www.youtube.com/watch?v=pQ7EjquxL_g