



DPI Case Study: The Agricultural Information Exchange Platform

Presentation by:

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Agricultural Information
Exchange Platform

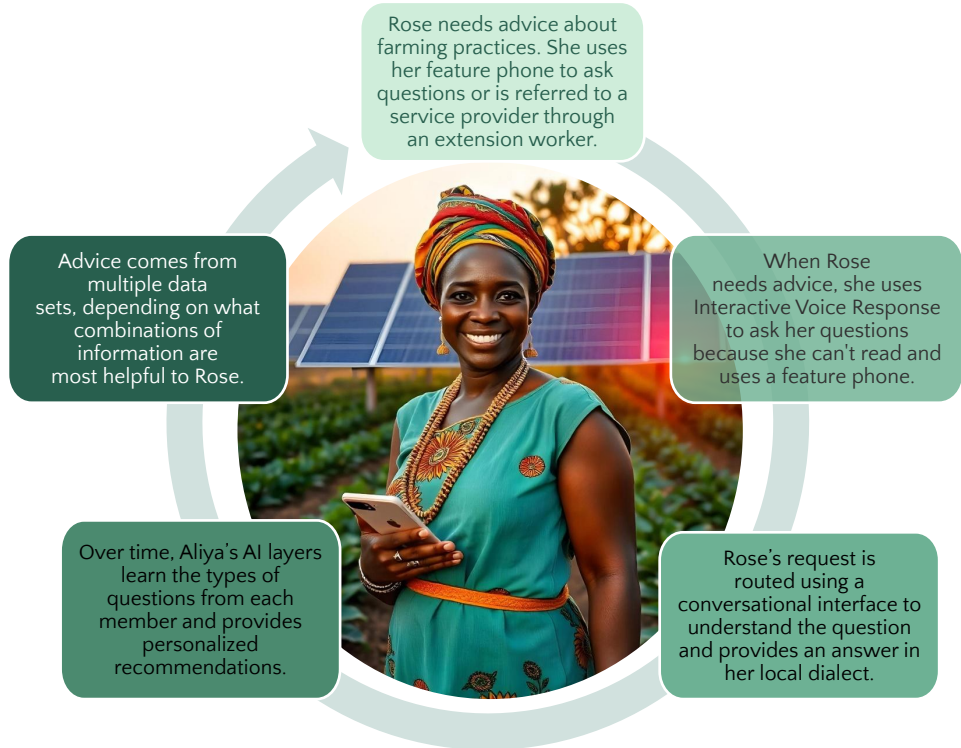


Use Case: Disrupting public extension utilizing generative AI

Recent advancements in digital technologies and Artificial Intelligence offer the opportunity to deliver high-quality, diverse, personalized, and dynamic information on farmers' current devices.

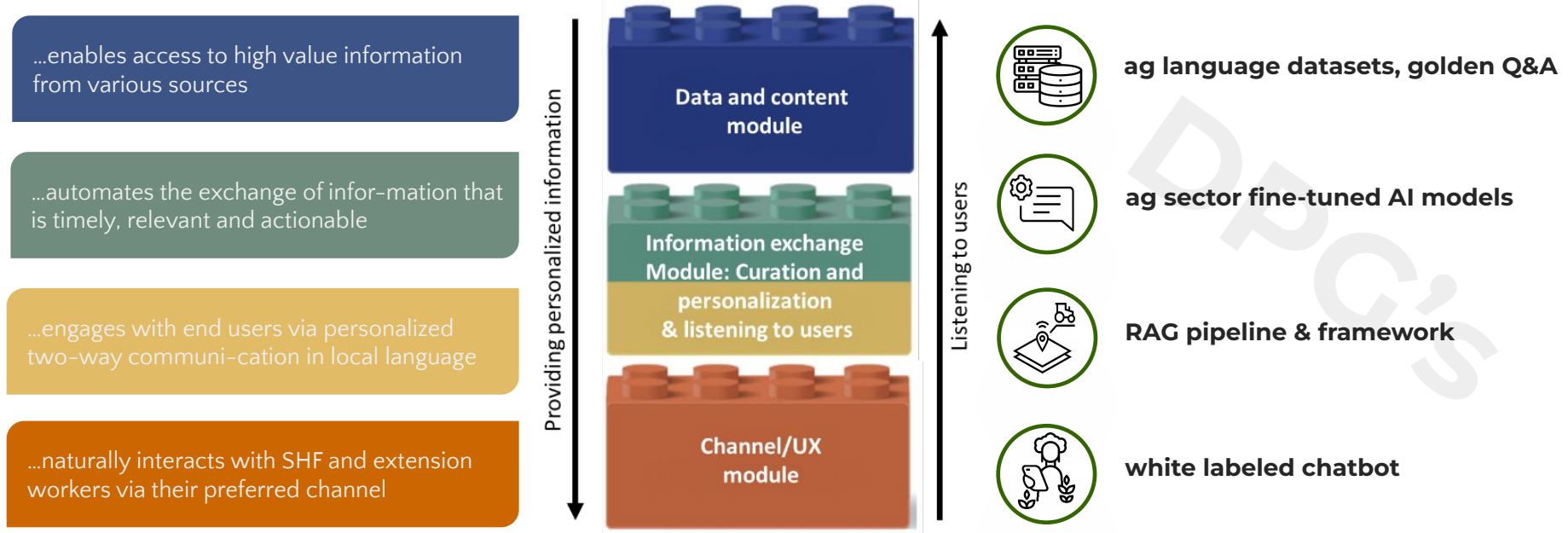


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DPI/DPG Approach of AIEP

The AIEP is an Artificial Intelligence powered digital solution which ...

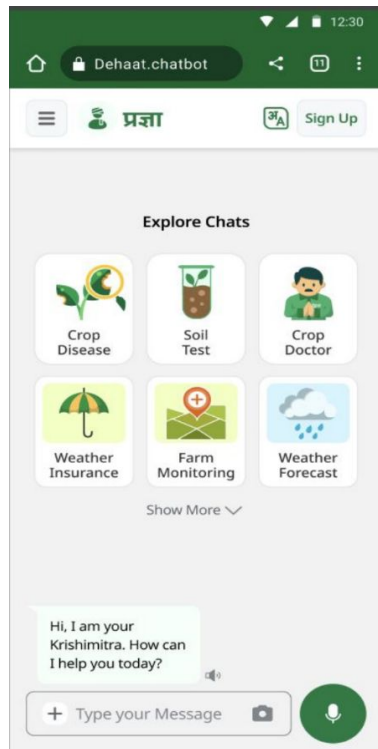
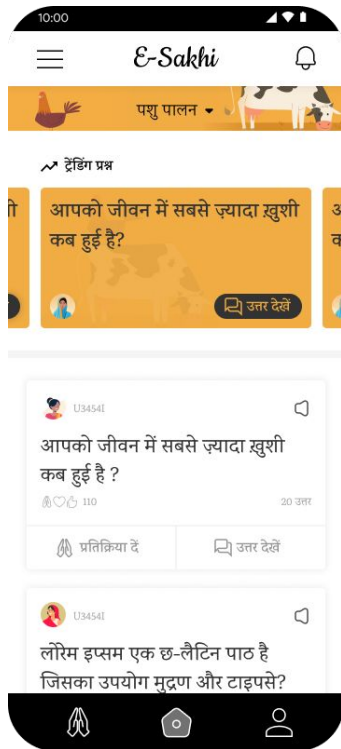
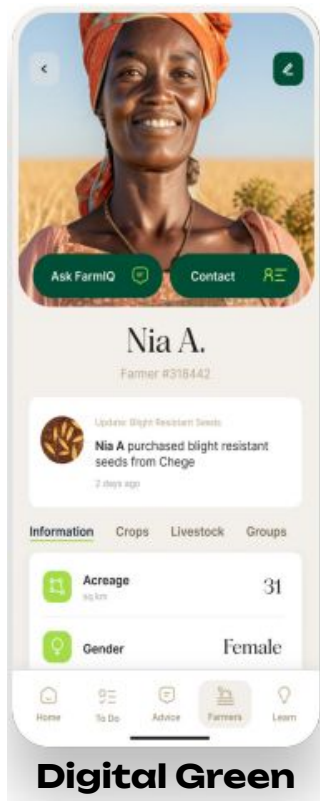


...based on re-usable, open and interoperable components that can be integrated into different DPI's.

MVP Development - The Cohorts

	dynAg	Digital Green & Partners	VIAMO & Partners	Tech For Her
Cohort				
Where				
Value Chains	Rice, Weat, Maize	Wheat, rice, coffee, dairy	Beans, Wheat	Tomato, Cattle
Channels	Chatbot/App (Android, Jio based), IVR (via ASR and TTS), SMS	WhatsApp, Telegram, IVR (via ASR), App, SMS	Voice hotline/IVR (via ASR/TTS), SMS, WhatsApp	IVR (via ASR and TTS), WhatsApp, App
				
Technology	Retrieval Augmented Generation (RAG) Pipeline based on LLMs (GPT suite so far), machine translation to translate queries, speech technology (recognition and synthesis)	RAG Pipeline based on LLMs (evaluation of various models), machine translation to translate queries, speech technology (recognition and synthesis)	RAG Pipeline based on LLMs (focus: GPT), potentially intent and entity recognition, machine translation to translate queries, speech technology (recognition and synthesis) enabled IVR	Intent and entity recognition through LLM for chatbot, speech technology (recognition and synthesis) enabled IVR, AI-based video generation
Languages	English, Hindi	English, Hindi, Swahili, Gikuyu	English, Hindi, Swahili	English, Hindi, Swahili, Bhojpuri
User reach	300	13.000	600	2.000

MVP Demo



Viamo

MVP Field Testing



Lessons Learned

01 Scaling/Partnerships

Existing public extension systems fall short in providing **contextual advice** in **preferred modalities** such as natural conversations in local languages. **Gen AI** can **scale ag advisory** through **automated** information exchange. Implementation is complex and requires a **multi-disciplinary partnership**.

03 Domain Data

So far, very few efforts focus on the peculiarities of agricultural data and **Smallholder Systems** to prepare **AI-ready data** that can help fine-tuning foundational models for **domain-specific** use.

05 DPG reuse in DPI initiatives – Call for Action

Orchestrating DPGs into end-to-end solutions and integrating them with (larger) DPI initiatives require **standardized and open protocols** to **exchange data** and to **interoperate** between software components/modules. DPI's are promising but still in their infancy. **Collective roadmapping and action planning are crucial to align**.

02 Language AI

NLP offer promising avenues for enhancing agricultural extension services, but its effective and responsible implementation requires careful **validation**, **human oversight**, and consideration of **local contexts** and challenges.

04 Data Sharing

There is a lack of available and labeled **open-source data** and **curated agricultural content**. AIEP spent considerable resources on preprocessing and creating own tagged and annotated data.





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Thank you for your attention. We are looking to scale this project in and outside of Kenya by including more partners. If you are interested to discuss more, please **contact:** christian.merz@giz.de



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