



MANAGE Agricultural Extension “Evening4Learning (E4L)” Webinar Series



Theme: “Innovations in Extension with Entrepreneurship”



Topic: “SmartU Krishi Khata: Transforming Agricultural Advisory through Digital Media”



Schedule:

29-04-2024, 19:00-19:30 PM



About the Program

The MANAGE Agricultural Extension “Evening4Learning” Webinar Series is aimed at enhancing knowledge and professional engagement in the field of agricultural extension. The four day series is structured with each day focusing on a distinct topic under a common theme, allowing participants to gain comprehensive insights into key areas of extension. The programme is intended for a diverse audience, including postgraduate and doctoral students, agricultural faculty, and industry professionals. It covers broad themes ranging from entrepreneurship and sustainability to emerging technologies in agriculture.



MANAGE
Agricultural Extension
“Evening4Learning”
Webinar Series
April 27-30, 2024
19.00-20.30 pm (IST)
Theme: Innovations in Extension with Entrepreneurship

Word cloud containing terms related to agricultural extension and entrepreneurship, including: Agro Tourism, Natural Farming, Social Media, ICT, FPO, Value Chain Extension, New Extensionist, Agripreneurship, Startups, Global Good Practices, Research in Extension, ToT, agricultural extension, Climate Resilient Agriculture, New Extensionist, Social Media, and others.



Speaker

Mr. Sachin Farfad Patil

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 Sachin Farfad Patil

About the Speaker

Mr. Sachin Farfad Patil, Founder of SmartU Krishi Khata, is a dynamic agripreneur and business leader with over 12 years of experience in the IT, EdTech, and startup sectors. Holding an MBA in Marketing and Operations and a Bachelor's degree in Computer Software and Media Applications, he is dedicated to empowering farmers through technology-driven solutions. Through SmartU Krishi Khata, he promotes digital innovation, entrepreneurship, and data-driven farm management, helping farmers enhance productivity, profitability, and informed decision-making.

Need for Digital Transformation in Agricultural Extension

Agriculture is characterized by a unique set of challenges that distinguish it from other sectors, making the delivery of timely, relevant, and need-based extension services increasingly complex. Although a wide range of digital platforms, market intelligence systems, and advisory services are available, their utilization by farmers remains limited due to constraints such as inadequate access to information, resource limitations, digital literacy gaps, and low levels of engagement. In this context, digital technologies offer tremendous potential to transform agricultural extension by enhancing its reach, efficiency, scalability, and impact. However, the true success of digital extension depends not merely on technological advancements, but on the development of farmer-centric solutions and delivery mechanisms that are simple, accessible, context-specific, and aligned with the diverse needs, capacities, and realities of farming communities.

Challenges in Technology Adoption among Farmers

Despite the growing availability of digital solutions in agriculture, several challenges continue to limit their adoption among farming communities.

a) Limited Awareness and Exposure

A significant proportion of farmers remain unaware of the digital tools, platforms, and advisory services available to support farm management and enterprise development. Limited exposure to emerging technologies and insufficient outreach efforts often result in low awareness levels, restricting farmers from leveraging the benefits of digital innovations for informed decision-making.

b) Inadequate Digital Infrastructure and Device Constraints

Many farmers rely on basic or entry-level smartphones with limited storage capacity and processing capabilities. The need to download multiple applications often becomes a constraint, discouraging the regular use of digital agricultural services. Consequently, the accessibility and sustained utilization of technology-based solutions remain a challenge.

c) Poor Connectivity in Rural Areas

Although mobile network coverage has expanded considerably, internet connectivity in many rural and remote regions continues to be inconsistent and unreliable. Frequent network disruptions and low internet speeds hinder seamless access to digital platforms, reducing their effectiveness and limiting farmers' engagement with online advisory and information services.

d) Low Digital Literacy and Technological Confidence

Limited digital literacy remains a major barrier to technology adoption. Many farmers are unfamiliar with navigating digital interfaces, operating mobile applications, or utilizing advanced digital tools. This lack of technological confidence often leads to hesitation in adopting new solutions, thereby slowing the integration of digital technologies into agricultural practices.

Together, these challenges underscore the need for simple, accessible, and farmer-friendly digital solutions, coupled with capacity-building efforts and improved rural digital infrastructure, to enhance the adoption and effectiveness of digital agricultural extension services.

Leveraging Digital Media in Agricultural Extension

The rapid increase in smartphone penetration among farming households has transformed the landscape of agricultural extension. With greater access to smartphones and expanding internet connectivity, farmers are increasingly engaging with digital platforms for information, learning, and decision-making. Simultaneously, the growing popularity of social media has created unprecedented opportunities for extension agencies to reach large numbers of farmers quickly, cost-effectively, and in a more interactive manner.

The increasing relevance of digital media in agricultural extension is evident through the widespread use of:

- Social media platforms
- Video-based learning and advisory content
- Mobile applications
- Interactive websites and portals
- Progressive Web Applications (PWAs)

These digital tools have emerged as powerful channels for disseminating timely and location-specific information, facilitating two-way communication, and enhancing farmer engagement. By leveraging these technologies, agricultural institutions, extension organizations, startups, and agribusiness firms can deliver advisory services more efficiently, expand their outreach, and promote informed decision-making among farming communities. Furthermore, digital media enables scalable, personalized, and farmer-centric extension approaches that complement conventional extension methods and contribute to the modernization of agricultural knowledge and information systems.

SmartU Krishi Khata: A Farmer-Centric Digital Innovation

SmartU Krishi Khata, an innovative digital platform designed to empower farmers through efficient farm financial management and data-driven decision-making. The platform enables farmers to systematically record and monitor their farm income, expenditures, and production-related activities, thereby promoting better financial planning and enterprise management. Since its launch, SmartU Krishi Khata has gained significant traction, serving more than 12,000 farmers, reflecting its growing relevance and acceptance among the farming community.

Sharing the journey behind its development, the team conducted an extensive review of over 200 agricultural mobile applications available in the market. While many of these applications offered valuable advisory services and technologically advanced features, their adoption and sustained usage among farmers remained limited. This analysis revealed a critical insight: the primary challenge was not the absence of innovative technologies, but rather the inadequacy of delivery mechanisms that failed to align with farmers' needs, preferences, and digital capabilities. The experience underscored the importance of designing simple, accessible, and user-centric solutions that seamlessly integrate into farmers' daily lives, thereby enhancing adoption and long-term engagement.

SmartU Krishi Khata: Leveraging WhatsApp for Farmer-Centric Digital Extension

To overcome the challenges associated with the adoption of conventional agricultural mobile applications, SmartU developed an innovative WhatsApp-based digital extension platform that leverages a communication tool already familiar to most farmers. Recognizing that many farmers use basic smartphones with limited storage capacity and often hesitate to download multiple applications, the platform was designed to operate entirely through WhatsApp, thereby eliminating the need for additional downloads and reducing technological barriers. By integrating extension services within a widely used communication channel, SmartU has made digital agricultural services more accessible, user-friendly, and scalable.

The platform offers a suite of farmer-centric services aimed at improving farm management, access to expert advice, and informed decision-making.

Krishi Khata

Krishi Khata serves as a digital farm diary that enables farmers to systematically record and monitor their farm finances through a native-language WhatsApp chatbot. The platform allows farmers to maintain records of income and expenditure, track cultivation costs, monitor profitability, and manage financial transactions in a simple and convenient manner. By digitizing farm records, Krishi Khata promotes better financial planning and supports data-driven farm management decisions.

Krishi Clinic

Krishi Clinic provides farmers with access to expert crop advisory services directly through WhatsApp. Farmers can share photographs and descriptions of crop-related problems, which are then reviewed by agronomists and agricultural experts. Based on the diagnosis, farmers receive timely recommendations and practical solutions, simplifying complex agricultural guidance into easy-to-understand conversations and enabling quick resolution of field-level issues.

Krishi Mahiti

Krishi Mahiti delivers real-time agricultural information and decision-support services through the WhatsApp platform. The service provides farmers with daily APMC market prices, compares prevailing market rates with Minimum Support Prices (MSP), and shares weather-related updates and agricultural insights. This information helps farmers make informed decisions regarding the timing of produce sales, market selection, and farm operations, thereby enhancing their marketing and risk-management capabilities.

The success of the SmartU model demonstrates the potential of leveraging commonly used digital communication platforms for agricultural extension. The WhatsApp-based services are particularly effective because they require minimal internet bandwidth, function efficiently on basic smartphones, utilize familiar user interfaces, support communication in local languages, and significantly reduce the technological and usability barriers often faced by farmers. By aligning technology delivery with farmers' existing digital habits and capacities, SmartU has created an innovative and scalable model for digital agricultural extension and farmer empowerment.

Artificial Intelligence for Agricultural Advisory Services

An AI-powered initiative being developed in collaboration with the Government of Maharashtra. The platform, known as Krishi AI, uses artificial intelligence to answer farmers' questions regarding government schemes, agricultural practices, and recommendations developed by agricultural universities.

The chatbot provides responses in local languages and enables farmers to access expert information through conversational interfaces.

Digital Tools for Extension Organizations

The emerging digital solutions that can strengthen the capacity of extension organizations, NGOs, development agencies, and agribusinesses to deliver more targeted, data-driven, and farmer-centric services. Smart D2F (Direct-to-Farmer) and Krishi Intel, demonstrates the potential of digital platforms to generate farmer intelligence, improve outreach, and support evidence-based decision-making.

Smart D2F (Direct-to-Farmer Access and Intelligence)

Smart D2F is a digital platform designed to help agribusinesses and extension organizations establish direct and targeted engagement with farmers. The platform facilitates farmer segmentation and profiling based on parameters such as landholding size, crop patterns, harvesting stages, spending patterns, production capacity, crop disease incidence, and geographical location. Such farmer intelligence enables organizations to design more precise and need-based extension and promotional interventions.

The platform supports targeted advertisements through text, images, and videos, dissemination of customized information, collection of farmer feedback and survey responses, and generation of leads and orders. It also leverages a network of 100+ village ambassadors to support outreach and campaign implementation at the grassroots level. The approach demonstrates how data-driven farmer profiling can help organizations move from generic outreach towards more localized, targeted, and demand-responsive extension services.



Krishi Intel

Krishi Intel is a digital intelligence platform that supports NGOs, development organizations, and other stakeholders in understanding agricultural communities and monitoring programme outcomes. The platform provides access to farmer-level and village-level insights covering cropping patterns, harvesting stages, crop diseases, crop expenditure patterns, and production capacity.

The platform was highlighted as having a reach of 20 lakh+ verified farmers through WhatsApp, covering 15+ crops and 4,500+ villages. By generating insights from farmer and agricultural data, Krishi Intel can support organizations in beneficiary profiling, programme monitoring, identification of emerging agricultural trends, and assessment of changes in farm practices and outcomes. Such data-driven systems can contribute to improved targeting, monitoring, and evaluation of development and extension interventions.



Overall, the digital tools such as Smart D2F and Krishi Intel can enable extension organizations to understand farmers better, communicate more effectively, capture feedback, and make evidence-based decisions, thereby improving the reach, relevance, and effectiveness of extension services.

Entrepreneurship Opportunities in Digital Agriculture

The growing opportunities for entrepreneurship in digital agriculture, emphasizing the need to develop technology-enabled solutions that are closely aligned with farmers' needs and ground-level realities. Successful agricultural enterprises require not only technological innovation but also effective mechanisms for building farmer engagement, trust, and sustained adoption.

Key factors for successful digital agriculture entrepreneurship include:

- **Building trust and credibility** among farmers through consistent and reliable services.
- **Developing strong digital brands** that enhance visibility, credibility, and farmer engagement.
- **Designing farmer-centric solutions** that address specific and practical agricultural challenges.
- **Leveraging digital technologies** to create value through improved access to information, services, markets, and inputs.
- **Continuously innovating service delivery models** to respond to changing farmer needs and emerging opportunities.

The experiences shared through SmartU Krishi Khata demonstrated how agri-startups can translate farmers' practical challenges into scalable, technology-enabled business solutions. Understanding farmer needs, establishing trust, and continuously refining service models are critical for creating sustainable enterprises while delivering tangible value to the farming community.

Key Highlights

- **Digital transformation should be farmer-centric:** The effectiveness of digital agricultural extension depends not only on technology but also on simple, accessible, context-specific, and need-based delivery mechanisms aligned with farmers' digital capabilities.
- **Bridging technology adoption gaps:** Limited awareness, basic smartphones, poor rural connectivity, and low digital literacy remain major barriers to digital adoption, highlighting the need for user-friendly solutions, capacity building, and improved digital infrastructure.
- **Leveraging familiar digital platforms:** The SmartU Krishi Khata model demonstrated the potential of WhatsApp-based extension services to overcome application-related barriers and provide accessible services such as digital farm records, crop advisory, market information, and weather updates.
- **AI-enabled and data-driven extension:** Initiatives such as Krishi AI, Smart D2F, and Krishi Intel illustrate how AI, farmer profiling, data analytics, and digital intelligence can enable personalized advisories, targeted outreach, programme monitoring, and evidence-based decision-making.
- **Digital tools can strengthen extension organizations:** Platforms such as Smart D2F and Krishi Intel enable organizations to segment farmers, conduct targeted campaigns, collect feedback, monitor agricultural trends, and improve the reach and effectiveness of extension interventions.
- **Entrepreneurship opportunities in digital agriculture:** Digital agriculture offers significant scope for agri-startups to create scalable business solutions by understanding farmer needs, building trust, developing strong digital brands, leveraging technology for value creation, and continuously innovating service delivery models.

Interactive discussion

1. How can digital agriculture platforms such as SmartU Krishi Khata sustain a profitable business model while providing services to farmers free of cost?

The sustainability of a digital agriculture platform does not necessarily depend on charging farmers for the services provided. In the case of SmartU Krishi Khata, the farmer-facing services are offered free of cost, while the platform generates valuable agricultural intelligence and analytics based on farmer interactions and usage patterns. These insights include crop segmentation, harvesting patterns, spending behaviour, landholding characteristics, livestock ownership, and other relevant parameters. Such intelligence enables agribusinesses to identify and reach specific categories of farmers through targeted communication and advertising. For instance, if a company wants to promote a product specifically among cotton farmers or farmers with particular landholding sizes, the platform can identify the relevant farmer segment and facilitate focused outreach.

Thus, the revenue model is based on creating value for agribusinesses through data-driven farmer segmentation, targeted engagement, and agricultural intelligence, rather than directly charging farmers. At the same time, the entrepreneurial objective extends beyond profit and valuation to creating sustainable social impact by improving access to agricultural services, supporting better livelihoods, and contributing to increased farmer incomes. This approach demonstrates how free farmer-centric services can be combined with analytics-driven business solutions to develop a financially sustainable and impact-oriented digital agriculture enterprise.

YouTube Link:
<https://youtu.be/bZXGGEbs5Sw?t=1>

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