

New solutions for Indian farming

The use of digital platforms can transform delivery mechanisms for agriculturists, reducing costs and turning their vocation into a potentially remunerative one

HARSH KUMAR BHANUWALA

There is something odd about many of the world's fastest-growing valuable companies. Facebook does not create content. Airbnb does not own any hotels or apartments. Uber does not own its cars. Alibaba is said to hold no inventory. What is common to all these companies? Their business is about providing an interface between producers and consumers, and all of them have leveraged information technology (IT) in a big way.

These new business models upend the way we traditionally view production and distribution structures. Do these examples provide us with any leads for developing solutions and interfaces for farmers which can transform delivery mechanisms for their various requirements? The answer is yes.

The growth in platform-based architectural solutions has paved the way for new methods to reach the market and the end-customer. The platform harnesses the power of the network (their inter-connectedness) and thrives on it. They also provide easy access to users and create resources in accordance with demand.

Current platforms germinate and grow in the digital ecosystem. This has a positive side-effect: transacting digitally captures data without additional effort. This data helps in building and improving models, which enriches the platform and helps reach out to more users, hence generating more meaningful data—a sort of self-propelling engine.

The time is ripe to establish a national-level digital platform for agriculture (AgriStack) to address all farming-related requirements end-to-end from the farmer's perspective. AgriStack may have a Farmers' Stack, a Farm Stack and a Crop Stack integrated on a technology platform linking existing digital land records, cadastral maps of farms and information.

Farmers' Stack can consist of farmer data with Aadhaar as unique identifier, Farm Stack can have geospatial information on each farm (with a farm identity) owned by a farmer with cadastral maps, and Crop Stack can contain crop data linked to farms. The Crop Stack would be more dynamic than any other component because of its variations, frequencies and utility.

The data should be interlinked to land registration, cadastral maps and satellite images from state government departments and public entities. This can be put in place in a short time, since the National Land Records Modernisation Programme (NRLMP) has this data. The status of digitisation of NRLMP indicates that out of 35 states and Union Territories, 20 have completed digitisation of record of rights (RoR), nine have linked RoR with registration and seven have completed cadastral maps. AgriStack will be able to address the needs of a variety of stakeholders.

Potential externalities of AgriStack

Indian agriculture is small holder-based. With the average size of landholdings at 1.08 hectares



and declining, innovations need to be found to ensure that farming remains remunerative. IT can play a huge role in this effort if it can leverage the requirements of farmers through a single integrated interface that will reduce costs not only for farmers, but also for the multifarious agencies that try to meet their requirements.

For example, IndiaStack transformed the financial products and services space in the country with acceleration in the pace of fintech applications, which has led to the creation of huge externalities for customers. A similar experience can be replicated for farmers if AgriStack comes into existence.

The success of AgriStack or, for that matter, any intervention that has multiple stakeholders, hinges on the fact that a variety of stakeholders should benefit from it.

AgriStack can have several potential uses:

- It can enable closer study of the flow of agricultural credit to specific land parcels. It will also enable credit flows and interest subventions to become more transparent.

- Crop insurance products and delivery can be improved, especially with geographic information system (GIS) and remote sensing technologies.

- Bankers can have regular "views" of land parcels, ensuring proper end-use of agriculture credit.

- GIS and IoT (Internet of things) services can be deployed to give feedback to stakeholders. For example, at the post-harvesting stage, a trigger to harvesting equipment suppliers and buyers may be sent, who can approach the cultivator for providing services.

- A marketplace can be created where various entrepreneurs and suppliers of products and services can meet.

- It can enable the provision of market intelligence for de-risking commodity price fluctuations, demand-supply forecasting and weather advisory.

- The centre-piece of the stack will be the farmer, who will receive all necessary implementation guidance and financial support, which are the focal point of marketing and purchasing channels, so that he can take a well-informed decision for maximising production and profits by harnessing the full potential of his land parcel.

Kick-starting AgriStack

The process of kick-starting AgriStack will be similar to the process adopted for IndiaStack, with governments, fintech companies and industry players collaborating and establishing public utility services on business principles. The learnings from IndiaStack, the National Data Sharing and Accessibility Policy and the Open Government Data platform can provide the necessary framework to commence the task.

Since agriculture is a state subject, it is critical that state governments are taken on board. It may not be out of place to mention that the NITI Aayog should propagate the idea of setting up a federal institution on the lines of the Goods and Services Tax Council, with participation from both the Centre and the states, to implement agricultural reform.

This federal set-up would also facilitate the revisiting of various laws and regulations related to land, labour and markets, besides creating an enabling environment for leveraging AgriStack. Coupling farmers' identities with land parcels will revolutionise the way the ecosystem can reach the farmer. Such an innovation is sorely needed.

The writer is chairman, Nibard. Views are personal