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RESEARCH NOTE

YAKSHA: Empowering agricultural extension

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Abstract: Yaksha has been designed by a scientist, a businessman and a social worker whose individual lives have been intertwined with agriculture since two decades. Four phases of development that span over six years has brought Yaksha to its present shape. And, it doesn't stop here. Many interesting additions are coming up in the near future that shall further expand its scope for serving the agri-sector. Yaksha is completely scalable to address any extension situation in the country. It is a cloud-hosted solution that is available in a simple and affordable licensing model. The content created and data generated are owned by the client organisations only; the company shall claim no rights whatsoever. On the other hand, the company shall be responsible for the maintenance and security of the client data.

Key words: Agriculture, Climate, Market

Today's leading agri-tech companies claim that they are capable of providing crop-specific information in a timely manner to individual farmers. Hence, forth, this capability shall not remain in the exclusive domain of the agri-tech companies; Yaksha makes it available to every organization in the agri-ecosystem. Yes, you read it right! An organization that uses Yaksha shall be technologically empowered to provide timely, crop-specific information to their farmers through a network of extension workers. Not just that, Yaksha also allows the organization to generate a variety of data on the prevailing situations, which could be used for supporting their farmers with agri-inputs, connecting them with the markets, predicting crop production, *etc.*

Yaksha is the much-awaited software product that empowers the entire agri-ecosystem. For-profit companies, not-for-profits, universities, research institutes, government departments, even individual consultants, can use Yaksha to disseminate any agricultural content and record data of their choice. Yaksha is so designed that users can handle it independently, with zero dependency on their software skills.

The pain points of ICT in agri extension

The primaryagri-stakeholders have been trying to harness the strength of software by developing applications that suit their specific needs. However, the complex nature of agriculture, and the difficulty faced by agri-professionals and software developers in understanding each other's subjects, has failed many attempts at developing such applications. Among those implemented, most are not scalable, not even across the activities of the same organisation. The large expenditure incurred towards developing, and, later, towards maintaining and modifying the applications has made it unsustainable to the agri-organisations and to the software companies who are developing them. These have turned into the major stumbling blocks for utilising the power of software in agriculture.

Handling the challenges of diversity

It is very well understood that agriculture flourishes only when it remains diverse and dynamic. Every crop species has numerous varieties; soils vary, water varies, climate varies, food habits vary, markets vary, problems vary, solutions vary, cultivation practices vary, and, the most important of all, ideas vary. Farmers, scientists, technologists, policies, etc., bring new thinking into farming at all times, which makes the subject alive and challenging. Unfortunately, as most of the agri-tech is presently owned by a few companies, and as they expand their reach, there is a fear of promoting uniformity at the loss of diversity. Therefore, it is important that every organisation, big and small, is digitally empowered so that the diversity and dynamics of the sector is retained.

The functioning of Yaksha

It is at this juncture that Yaksha comes in to provide a holistic solution to those into agri-extension. Yaksha contains all the components necessary for developing an independent software tool for extension. By following a few simple steps, the users of Yaksha can develop their own content. They can constantly fine-tune the content to cover every possible variation, to keep abreast with the prevailing times. This empowers the users to implement new ideas and respond to local situations in their own ways, thereby promoting diversity. The content is then published on the extension workers' smartphones with the Yaksha app. The app enables the workers to guide farmers at each step of their respective cropping cycles. Yaksha is meant for organisations that are capable of developing cultivation packages and disseminating them to the farmers through extension personnel. In addition to providing extension services to the farmers, Yaksha can be used to generate primary data that are required of every possible agricultural situation.

Yaksha is simple to use

Create Data Fields with a few simple clicks, just drag and drop the Fields into Forms, join the Forms to generate Knowledge Lines, and publish the Knowledge Lines on specific smartphones. Then, conduct the extension activities with the Yaksha App on smartphones. Finally, the data that reach the servers are available as reports in real time.

Concluding remarks

Yaksha has been designed by a scientist, a businessman and a social worker whose individual lives have been intertwined with agriculture since two decades. Four phases of development that span over six years has brought Yaksha to its present shape. And, it doesn't stop here. Many interesting additions are coming up in the near future that shall further expand its scope for serving the agri-sector. Yaksha is completely scalable to address any extension situation in the country. It is a cloud-hosted solution that is available in a simple and affordable licensing model. The content created and data generated are owned by the client organisations only; the company shall claim no rights whatsoever. On the other hand, the company shall be responsible for the maintenance and security of the client data.