CASE STUDY

SMARTFARMING

Eastern Enterprise worked with SmartFarming, an Agro startup, to develop an app that helps farmers maximize their yields and profits.

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About SMARTFARMING

SmartFarming is an exciting new startup in the agriculture industry based based out of The Netherlands. The company was founded back in 2014 by two young agriculture research students Rob & Sven. Their backgrounds, experience and passion for bringing agriculture and technology together are the perfect foundation to serve B2B customers and their needs.

SmartFarming Tech in collaboration with Eastern Enterprise developed an Android-based app to help farmers improve farming production, deal with crop diseases, improve weather forecasting and improve farm incomes overall.

Project Challenges

SmartFarming believes that rather than enhancement digitalization is a necessary innovation in farming, which if correctly implemented could help farmers to deal with all the challenges they face. Moreover, the rich insights derived by the application could help farmers be more precise in their use of pesticides and fertilizers, thus mitigating environmental impact. Technological deployment in agriculture can address many challenges and increase the quality, quantity, and cost-effectiveness of agricultural production.

With Smart Farming, Rob and Sven sought to develop an application to help farmers improve production, deal with crop diseases, improve weather forecasting and improve farm incomes overall. Likewise, the app would aim to manage advice among the community, crop variety, and irrigation cycles of the particular user base. The app would also guide farmers by notifying them on better techniques and best practices. Furthermore, the most challenging task our developers at Eastern Enterprise faced was implementing a spraying module which managed advice on how and when to spray crops based on weather forecasts obtained from OpenWeathermap API.

Our Solution

Just like any other living organism, crops too are susceptible to diseases and using the collecive knowledge of farmers around The Netherlands would help prevent crop failure due to bad management or disease. After going through the client's requirements, Eastern Enterprise proposed a solution to develop an android app for cotton and potato with a CMS which would be used by the SmartFarming Team to guide farmers in India.

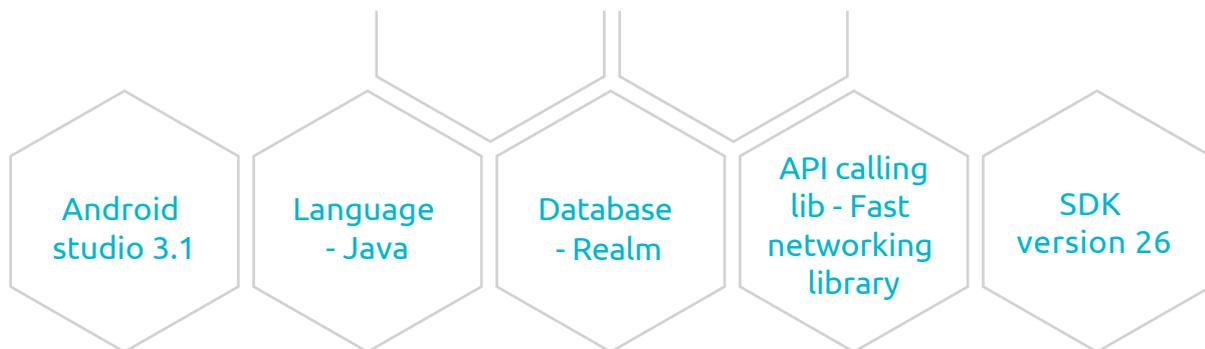The app provides guidelines for the following farmer tasks:

- **Pre-sowing** – provides suggestion on how to sow the seeds.

- **Daily advice** – provides daily advice on what tasks should be carried out and when.

- **Irrigation** – suggestions of when and how much irrigation is necessary.

- **Fertilization** – advice on the amount of fertilizer to be applied on the farm.

- **Spraying** – lets the farmer know when they need to spray.

- **Identification** - lets the farmer know how the crop should look at each stage. The identification flow may vary based on the variety set in user profile.

The SmartFarming app is a decision supporting tool for sustainable potato and cotton farming. It also provides farmers with information about their crops such as:

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- Integrated pest and disease management.

- Pre and post-harvest techniques.

- Best agricultural practices.

- Measures to prevent pests and plagues.

- Soil and water management.

The solution was built using the technology stack:

App Side

Android studio 3.1   Language - Java   Database - Realm   API calling lib - Fast networking library   SDK version 26

CMS (Back-end)

PHP 7.1 (Laravel 5.5)   JQuery   HTML   MySQL

End Result

The client was extremely satisfied with the end-result and commended us on our approach. The app provides farmers an improved ability to identify important pests, diseases and nutrient deficiencies and manage them in order to safeguard crops and by extension, their livelihoods. The app further offers advice on remedies ranging from conventional control options to preventive measures.

By using the app for crop management, farmers are able to minimize external inputs and increase yields. The app supports farmers in producing a better quality yields and helps prevent their crops from being destroyed. In this way potato and cotton farming becomes more profitable. The app is now used by 5000+ users and it is still increasing day by day.

Key Benefits

- Optimized crop treatment such as accurate planting, watering, pesticide application and harvesting directly affects production rates.

- Automating processes in planting, treatment and harvesting can reduce resource consumption, human error and overall cost.

- Analyzing production quality and results in correlation to treatment can teach farmers to adjust processes to increase quality of the product.

- Accurately tracking production rates per field over time allows for detailed prediction of future crop yield and the value of a farm.

- Local and commercial farmers can monitor multiple fields in multiple locations around the globe with just an internet connection and decisions can be made in real-time.

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We are experiencing the collaboration with Eastern Enterprise as very pleasant. We especially like the direct contact with the whole team, their flexibility and commitment. The team always thinks critically along with us to get to the best solution for our situation.

Rob van Oudheusden,
Director Product & Technical / Co-founder, SmartFarming

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About Eastern Enterprise

Eastern Enterprise is a Dutch IT service company that specializes in crafting software solutions for startups and S&M enterprises. We are a 250+ strong team of passionate technology artists servicing over 100 clients across Europe to create software solutions that are robust, creative, modern, user-centric, logical and secure.

We specialize in software product development, mobile app development and custom application development for startups. With our mature quality processes, agile development approach and unique engagement model we deliver bespoke solutions for all your business needs.

We work as a trusted technology partner to provide end-to-end solutions for all your software development requirements. We don't simply develop solutions, we craft them for your specific business needs using cutting edge technology platforms.

For more information, please visit:

https://www.easternenterprise.com

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