Project Summary for Research, Development & Commercialisation Team

Date:	**18/12/2018**	Country:	**Fiji**
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Project:	**FarmEd I, II- Sales and Scalability**		

1. Abstract or Executive Summary

FarmEd is dedicated to achieving goals 1 and 2 of the UN Sustainable Development Goals:

- Goal 1: End poverty in all its forms everywhere
- Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture

FarmEd is currently the most advanced of Project Everest's ventures and aims to provide commercial consulting services to farmers. The current focus of FarmEd is to create an AI enabled farm management software system that farmers can access through their mobile phones. As of now, all work in country has been to determine the product market fit of FarmEd by understanding how farmers could interact with an app, understanding whether farmers have access to the technology required to use the app and whether they would be willing to pay for the service.

The end state product based on our findings will consist of a platform where farmers can input agricultural data specific to their farm (soil pH, moisture, etc.) and receive tailored recommendations on how to increase their crop yield and quality. The farmers would then have the ability to ask specific questions about what actions they should take and receive tailored answers.

2. Background

In the past, FarmEd has explored supply chain management, face to face consulting, drone consulting and agricultural expertise workshops. While there is value in the above products, FarmEd aims to focus on the development of the app as it has been proven to be the most scalable and accessible way of providing agricultural expertise. Over December 2018, both FarmEd teams focused on sales and scalability of the App.

FarmEd I - Sales

Over the course of the month, FarmEd I worked on sales and pitching the app to potential customers. Along with this was the addition of customer details to Hubspot enabling an easier transition and adoption of the project by the January team. Many supporting documents, such as SOPs, were also created to facilitate these tasks.
The FarmEd teams in the past have collected information from farmers with the use of surveys leading to the development of the FarmEd app. Empathizing and explaining the features of the app was a task undertaken by both the July and the December teams.

FarmEd II - Scalability

FarmEd II worked on scaling the App by focusing on developing relationships with key stakeholders such as resorts, hotels, supermarkets and fresh produce export companies. These relationships were created with the intention of gaining access to the business' network of farmers, or to incentivise the businesses to purchase the app on behalf of their farmers, or to purchase the resulting data.

3. The Problem

Definition of the Problem Space

The problem that FarmEd seeks to address is explained here:
https://projecteverest.crowdicity.com/post/786800

How Widespread is the Problem space?

In Fiji, 28% of the population - 238,000 people- are employed in the agricultural industry which accounts for 8.9% of the country's GDP. Further [smallholder farmers are estimated to produce 80% of food within developing countries (Source: BAYER)]. Hence, without access to tailored agricultural expertise, the impact of low produce spreads wider than the farmers themselves.

Who is Affected by this Problem?

Smallholder and Subsistence Farmers: Smallholder farmers rely on external distribution of their produce to earn a steady income and generally use produce to feed themselves and family. If subsistence farmers cannot grow enough or if smallholder farmers do not have enough produce to sell, these farmers may experience food insecurity and economic distress.

- ● **The Community**: In terms of access to food, farmers contribute significantly to the produce their community consumed. Should they not grow enough produce, or have a lack of diversity, it can contribute highly to food insecurity on a much larger scale. In addition, the agriculture sector accounts for approx. 28% of Fiji's formal employment, and indirectly employs many more. Hence, without strong farming practices, both food insecurity and income is at risk.
- ● **Global population**: By smallholder farmers not fulfilling produce quotas, the global population may be affected. This is due to an indirect impact on the world's food supply demands, as approx. 80% of the developing world depends on smallholder farmers (Source: UN SDG).

Who would benefit from solving this problem?

Both businesses/organisations and farmers will benefit from solving this problem. More information can be found here: https://projecteverest.crowdicity.com/post/783670

Countries such as New Zealand, USA and Australia that Fijain farmers export to, could benefit from the diversity, increase in crop quality and efficiency that the solution can bring.

4. Proposed Solutions

How are People Currently Seeking Agricultural Expertise?

Currently there are limited opportunities for farmers to gain agricultural expertise. In order to develop their farming practices, smallholder farmers rely on:

- Knowledge passed down through generations,
- Workshops and soil testing/consulting provided by the Ministry of Agriculture (MoA) and other organisations; and
- Face-to-face agricultural consulting

These solutions do not effectively provide agricultural expertise. Generational learning encourages farmers to grow what has always been grown by tradition. These farming methods are not often planned to maximise revenue from sales or optimise the environment that their particular farm provides. Traditional farming contributes to the lack of crop diversity and inhibits the inclusion of new technology in farming practices. While workshops are a sound way of passing information to farmers, they do not provide them with tailored advice. Face-to-face agricultural consulting is more personalised to the individual farmer, however it is resource heavy and takes months to complete. FarmEd aims to fill this gap by developing an application that gives smallholder farmers access to real-time, tailored agricultural advice.

What Solutions has Project Everest Ventures Considered?

As stated previously, FarmEd has explored various solutions in order to deliver agricultural advice. Despite being well developed and conducted, there were issues raised relating to the scalability of these solutions. Face to face, drone consulting and agricultural workshops could only be conducted while PEV is operating in country thereby inhibiting their effectiveness, and supply chain management would result in a very localised solution that would only be valid for Fiji (as it would involved essential partnerships with Fiji based organisations) and would not be able to be scaled internationally or even nationally scalable. Moreso, attending workshops imposed an extra logistical burden on the farmers thereby making this solution unviable.

What is the Most Promising Solution Evaluated?

The most viable solution is the use of an App as a farm management platform that will provide farming advice tailored to each individual farm. The App will allow farmers to input details about their farm, particularly their soil, and in turn receive tailored professional advice on what crops to grow and when to grow them using the appropriate farming techniques. This aims to increase crop yields and diversity, and creates a food supply chain that is more efficient and reliable, hence improving quality and profitability of both farmers and the businesses that they supply to.

What Phases are Required to Implement this Solution?

Starting from the beginning of December, there are three major phases that will occur in the development of the FarmEd app, as shown in the table below.

Phase	Goal	Date	Details
1	Sales and development	December 2018	The goal for this phase was to show that a farming app is a viable product for the Fiji.
2	Product Development	January - February 2018-2019	The goal for this phase is to test and develop a prototype of the FarmEd platform, along

			with providing and installing app to farmers.
3	Scaling	March 2019 - onwards	Scaling the platform across to reach as many people as possible.

What Key Issues may Prevent the Solution from Being Implemented?

Access to Smartphones

A hurdle in the implementation of the app is the percentage of farmers that have access to smartphones. A large number of farmers do not currently have a need for modern phones and some might not have the means to purchase/support them.

Access to Data

Furthermore in order for the farmers to receive tailored information, there must be a reliable connection to the FarmEd server and an internet connection, which can be difficult in Fiji where mobile and data reception is not consistent in some areas.

Social Inertia

There may also be issues as the advice FarmEd is looking to provide is from a different cultural background to Fiji, and there may be some resistance by the farmers to adapt or abandon their traditional practices for the new ones proposed. This issue could be further complicated as many have had these practices passed down for generations as part of their families legacy.

Why is this solution superior to other solutions considered?

Strengths

The mobile app is the fastest farming advice in the Fijian market. Given that most farmers or their families have phones, the solution can reach a multitude of people simultaneously. Current government process, which involves agricultural consultants, is slow and not efficient in delivering advice on time. Once the platform is up and running, market knowledge and financial services can all be incorporated into the app making it an all-in-one platform for farmers.

Weaknesses

As the app is a technology based solution, it requires the user to have a phone or smartphone as well as an internet connection. Some farmers, particularly the older generation, have no access to phones and therefore cannot use this app. There is also a potential that village chiefs or headmen find the app difficult to adopt/use and convey the app negatively within the community. Further, we currently rely on the technology created by Western Sydney University, and this placement of trust in an external organisation can enhance risk if obligations are not met.

Opportunities

The app provides vast opportunities to the farmers as well as shareholders as it can be modelled and introduced to other countries experiencing similar problems as Fiji. Additional data may be required, but if it's successful and scaliable in Fiji, it can be assumed that similar business model will work in other parts of the world.

Threats

Major threats impacting this app is the competition from other companies developing a similar app. A company with more resources or a better business model or earlier launch all impose a threat on the PE app.

5. Competitor Analysis

Several companies operate in the global agricultural sector, specialising in consultancy, financial support, market insights, farm analytics and distribution management. Relevant competitors are based in countries such as Cambodia, Australia and India, however are not present in Fiji, allowing FarmEd to continue to develop with minimal fear of falling behind other competitors. A competitor analysis can be found here:
https://docs.google.com/document/d/1R8-u-x-WRN98n9zIC3WMnm1KOgNwj9kPAFYBc_jkkQA/edit#

6. Backing Data

B2C Traction

B2C Market traction and validity for the FarmEd Application is measured by offer testing and currency testing, as well as secondary research regarding; market reach, demand of the FarmEd application, willingness and ability to pay, and usability of a smartphone application.

Customer and Market Reach
According to the Fiji 2017 census, 28% or approximately 238,000 people are employed in the agricultural industry meaning there is a high potential for scalability in the market. The current size of the agricultural industry is 8.9% of Fiji's GDP, which is currently valued at 952 million. This is expected to grow to 1.068 billion by 2021 along with the countries GDP growth. This predicts the growing need for agricultural expertise within the Fiji market.
2017 Fijian Census (data found **here**; questionnaire found **here**)

Interest in product
In July 2018, offer test was carried out within the Sigatoka region. [**Data Analysis**] Through offer testing, we found a large interest in technology based farm management system (see **Expression of Interest Letter**). 27 out of 30 people expressed interest of the product through the offer test. This was at a massive 90% acceptance rate. [**Compiled Farmer Database**]

Willingness to pay
Through currency testing in July 2018, which measures if farmers were willing to pay for a technology based farm management software. 34 out of 37 people showed they were willing to

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pay - that is 92% successful currency tests. This indicates that farmers were willing to invest money in agricultural advice.

31 out of 34 people expressed interest in a continuing subscription to the product by signing the MOU document. [**Memorandum of Understanding**]. The currency tests showed that a large percentage of people we spoke to, from a diverse range of circumstances, were willing to pay for the FarmEd App.

In December 2018, more pre-sales (16 out of 68) with the conversion rate of 23.5% were made, where there were
- 9 12-month subscription
- 7 3-month subscription

And 30 out of 68 (44.1%) EOIs signing an MOU which indicates their explicit interest, further confirming that there's a market for the app within Fiji.

Ability to pay
The amount spent on the farms by individuals ranges from $30 to $4000 per month with the average spending being $493 per month. [**Compiled Farmer Database**]
The average monthly price that was acceptable was $10.95. This however seems a low estimate of the price point farmers are willing to pay. With a subscription fee of $1/month and $10/year, finance would not be a barrier to purchasing the app.

Usability of the FarmEd App
Through primary research, it was identified that 68% (n=122) of farmers have access to smartphones with most (96.9%) using an Android phone. Thus, proving that a smartphone application would be an effective product to distribute agricultural expertise to farmers.
(Data on Access to smartphones and mobile data can be found **here** and **here**; questionnaire found here; rubric found **here**)

B2B Traction
To date, most research has been done on B2C door-to-door selling to smallholder farmers. However, through empathising with stakeholders (e.g. NGOs, exporters and resorts) and utilising secondary data, we are able to to conclude that there is a traction for B2B sales.

Demand for Agriculture expertise
While the NGOs, exporters and resorts do not require agricultural expertise through the FarmEd application, it was found that these stakeholders work with and/or source from a network of local farmers. The data collected from Agrana (an international exporter) indicates that they would like their network of farmers to receive agricultural training and advice in order to improve their quality and quantity of their produce. Through empathising with these stakeholders, it has been shown that there is a desire for a method in which businesses are able to provide their farmers with information on pests/crop diseases and also when to plant their crops based on soil data/seasons

Demand for Agricultural Data
Through empathising with stakeholders, more specifically businesses and resorts, we tested the assumption that data from the FarmEd application would be useful in streamlining their supply chain and to monitor the progress of their farmers in regards to crop growth and crop yield. 3 stakeholders have shown explicit interest in forming an agreement with FarmEd which involves

the sales of data. Businesses are able to secure their supply chain through monitoring the crop yields and variety of crops that the farmers they source from grow. **Meeting minutes can be found on Hubspot**

7. Critical Future Actions

From 2016-18, FarmEd strongly focused on empathising with farmers, understanding their crop management and pain points faced during the management process. This gave us a thorough understanding of the agricultural landscape in Fiji. Now a MVP has come to fruition, commercialisation to farmers is the next logical step. The focus in early 2019 should be gaining constant feedback on the app prototype to further optimise the product, collection of farmers' data and continue to build scalability.

What are the key next steps?

1. **Prototype development and feedback collection**
As the prototype reaches the farmers, routine app feedback must be collected from customers. Future teams should visit farmers sometime after installation to assist and receive feedback. They should devise feedback collection methods and communicate to commercialisation team for app development. Prototype development occurs in Australia, through feedback collection in Fiji.
'User experience' experiment: https://projecteverest.crowdicity.com/post/788470

2. **Optimise methods for data collection from farmers for future data sales**
FarmEd will eventually sell data collected from farmers as a mean of revenue to businesses. Thus, future teams should devise methods that can effectively collect this data and display them in a clear and concise manner for different businesses. This is essential as the value of the data has to be perceivable and be quickly implemented by the buyer. Both data collection methods and data sales strategies can be completed in Australia and Fiji.
'Offer testing' experiment: https://projecteverest.crowdicity.com/post/787780

3. **Set up an online mobile banking system**
To increase scalability, the cash payment method of the farmers must be eliminated in the months when no PEV teams are present in Fiji. As a result, the future teams should aim to have an online mobile banking system working and running by the end of February 2019. PEV will need to be present in Fiji to open a BSP bank account though the form can be filled out from Australia and taken over with one of the leaders for January. Review "Banking pitch -BSP, FarmEd 01 OS for details in regard to the payment methods and account requirments" https://docs.google.com/document/d/1Wrts9C6nbbXERO8VZg2S-Z4WVsgvejSlp0-Zz5dqn0w/edit
'Payment methods and usage' experiment: https://projecteverest.crowdicity.com/post/669060

4. **Continue to build and maintain stakeholder relationships**
The future teams should maintain and improve existing stakeholder relationships built previously with a focus of signing the Memorandum of Understandings and eventually a contract. New potential stakeholders should also be continuously sought after and establish means to increase the scalability of the app through them. The research of new stakeholders can be completed from Australia, the maintaining of relationships and creation of new relationships will be conducted in Fiji.

'Offer Testing' experiment: https://projecteverest.crowdicity.com/post/644930

5. Continue to expand our network of farmers by any means

The ultimate goal of the app is to reach all farmers in Fiji, and hence it is essential that we continue to expand our network of farmers. The future team should continue to ideate and implement traditional or innovative marketing strategies to further build scalability of the technology in a cost-effective manner. This is pivotal in achieving product scalability in the B2C stream and retaining PEV presence in Fiji. The strategies can be designed from Australia to ensure that the project has a determined strategy prior to meeting arrangements in Fiji.

'Marketing Strategy' experiment: https://projecteverest.crowdicity.com/post/764350

Intermediate Analysis

1. Currency testing for businesses

The currency testing is needed to ensure that businesses are willing to pay the set price point for access to the app. This will be a block if not tested.

https://projecteverest.crowdicity.com/post/733520

2. Supply channel for soil sensor kits

This is vital to ensure that FarmEd can operate without the Project Everest team on the ground.

https://projecteverest.crowdicity.com/post/784060

3. Creating a dashboard for data display

This will prove necessary to ensure that businesses are receiving relevant and useful data on their farmers.

https://projecteverest.crowdicity.com/post/787780

Future Key Activities in a Snapshot

Key Future Activities	Expertise needed	Australia/ Fiji	Time frame
Prototype development and feedback collection.	Software development expertise, creative thinking	Australia & Fiji	4 weeks
Optimise methods for data collection from farmers for future data sales	Statistical skills and graphic designing expertise	Australia & Fiji	2 weeks
Set up an online banking system	Financial/banking expertise	Fiji	1 day
Continue to build and maintain stakeholder relationships	Soft People skills, Corporate Communication skills, Critical thinking, Customer relationship management (Hubspot)	Australia & Fiji	4 weeks

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Continue to expand our network of farmers by any means	Research skills, Cross-cultural skills, Complex Problem solving	Australia & Fiji	4 weeks
Identify barriers to sustainable/efficient practice implementation and research alternative pathways	Research skills, empathy building, data collection, problem solving	Fiji	4 weeks

Goals for January 2019

By the end of Summer 2019, FarmEd should have reached the stage at which it is self-sustainable, without trekker presence in Fiji. To reach this point, the following assumptions should have been validated:

App Development
1. 'The customer is able to easily use the MVP of the application to extract the information they need'.
2. 'Accurate agricultural expertise can be provided to farmers through the use of a database that encompasses all relevant knowledge.'
3. 'The MVP is optimised from the feedbacks obtained from consulting the early adopters after app release and is ready for the next stage of development.'
4. 'A majority of advice provided by the app is easily implementable by the average villager. If not, barriers to implementation should be looked into to provide alternative pathways.'
5. The advice provided by the app leads to the implementation of largely environmentally sustainable and efficient agricultural practices. If not, determine potential development pathways.

Scalability
1. 'The potential customer is willing and able to pay a repeating fee for the use of FarmEd without the need for physical collection of cash.'
2. 'The distribution of sensors or soil testing kits to gather information of customer's farms can be executed without physical delivery of these sensors or soil testing kits.'
3. 'The potential customer is reachable through various non-physical marketing strategies, including utilising businesses, NGO or Co-op's platforms and minimising door-to-door sale.

Stakeholder Relationship Management
1. Connect with farmers that have signed MOU's or expressed interest during previous months in the app.
2. Reach out to high-priority villages.

8. Risks

Commercial

1. It is not guaranteed that MoU signatures will result in a corresponding number of closes. This could result in a lack of sales and thus loss in revenue.

2. Farmers and/or business stakeholders may experience difficulties living up to the obligations of the agreement.
3. Farmers and/or business stakeholders may have differences in interpreting the MoU. This could be due to confusion on the terms of the MoU and what we're asking for.

Safety

1. Due to the lack of knowledge surrounding new villages/locations, travelling to and from them could pose a safety risk. These could arise from the environment, individuals at the location or a lack of proper planning.

Reputation

1. FarmEd's credibility might be at risk due to data inaccuracy or recommendations.
2. Unprofessional contact and customer service may result in farmers' potential post-purchase dissonance.
3. Trekkers may potentially act out of line when in-country. This may pose threat to PEV's positive reputation and will potentially undermine other Fiji projects.
4. There is potential for the application to not last longer then the agreed upon partnership with WSU. If this occurs, the application may shut down, leading to distrust between farmers and PEV who've used the app for their agriculture.

Financial

1. The sales of FarmEd app might not generate a return higher than cost of production.
2. Some strategies dedicated to the scalability or marketing of the app may be costly and potentially ineffective.

See link for more details: FarmEd II Impact Assessment
https://docs.google.com/document/d/1CePhEU0dmt6ebqXP0udaAdUTEbKWxdD_CO6reJ8jTww/edit

9. Next Teams Goals

FarmEd I

Key actions for next month: Maintaining relationships with those who have signed MOU's and paid for the app. Continuing sales, in particular with villages of high priority. Delivering the app and sensors, conducting demonstrations, and determining the usefulness of the app

Experiment 1:

Quality survey of the FarmEd app and ensuring customers are highly satisfied with the product.
See link for experiment and metrics: https://projecteverest.crowdicity.com/post/735110

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Experiment 2:

Determining the level data accessibility in villages, whether the app is usable, and seeing whether the Vodafone data map is an accurate way to forecast this.
See link for experiment and metrics: https://projecteverest.crowdicity.com/post/767790

Experiment 3:

Determining the effectiveness of demonstrations, whether they increase the app's perceived value and customer satisfaction.
See link for experiment and metrics: https://projecteverest.crowdicity.com/post/787440

Experiment 4:

Determining whether the a majority of signed MOUs are converted to cash sales.
See link for experiment and metrics: https://projecteverest.crowdicity.com/post/704110

Experiment 5:

Looking at the amount of successful referrals made to potential customers, and whether this rate could be increased with the potential of benefits and offers.
See link for experiment and metrics: https://projecteverest.crowdicity.com/post/788940

Experiment 6 (Case Study):

A village case study on:
- The regularity of use of the application
- If the app provided information that helped make informed decisions
- Usability/ Ease of Navigation

See link for experiment and metrics: https://projecteverest.crowdicity.com/post/788670

Experiment 7:

Begin stages of a long-term impact assessment of Project Everest and the FarmEd app.
See link for experiment and metrics: https://projecteverest.crowdicity.com/post/772550

FarmEd II

Key actions for next month: Contact our three main stakeholders we have been in contact with. Follow up Agrana and the Fiji National University as MOUs have been sent towards the end of December. Reach out to Simon Cole whom is the chairman of FCLC once the FarmEd app has been finalised.

Experiment 1: SMS text blasting experiment for January is testing the viability of using the service to reach out to Farmers across Fiji.
See link for experiment and metrics: https://projecteverest.crowdicity.com/post/786720

Experiment 2: Supply Chain experiment for January is testing the ability to distribute soil sensors to farmers without PEV being involved.
See link for experiment and metrics: https://projecteverest.crowdicity.com/post/784060

Experiment 3: Radio and Newspaper experiment for January testing the viability of traditional marketing strategies.
See link for experiment and metrics: https://projecteverest.crowdicity.com/post/783270

Experiment 4: Pitch FarmEd app during conferences and gatherings of farmers to gain access to a wider network of farmers.
See link for experiment and metrics: https://projecteverest.crowdicity.com/post/779220

Experiment 5: Pitch data dashboard and features to stakeholders whom are interested in the application.
See link for experiment and metrics:https://projecteverest.crowdicity.com/post/787780

Experiment 6: Testing whether businesses are willing to pay for the App on behalf of their farmers at our proposed prices. This experiment was designed in December, however it was unable to be run, so we propose that it is carried out in January.
See link for experiment and metrics: https://projecteverest.crowdicity.com/post/733520

Experiment 7: User experiencing, testing what stakeholders think of the application and what improvements can be made.
See link for experiment and metrics: https://projecteverest.crowdicity.com/post/788470

Experiment 8: Currency testing, testing the viability of implementing a premium model for data selling.
See link for experiment and metrics: https://projecteverest.crowdicity.com/post/788810

10. Other Useful Documents

App features (value proposition)
https://docs.google.com/spreadsheets/d/1UliC_qiT-6GcWhcVLAYWyKGPq3VQI68tmFC-3TyheOU/edit#gid=0

Analysis of key stakeholders:
https://docs.google.com/document/d/1FD2YCNO7_XTdsEmVao4EPnO8M5UeVQxmqTDDHYAixek/edit

Logbook of stakeholders that have been contacted by FarmEd II in December:
https://docs.google.com/spreadsheets/d/1MyQALxOaPz-_7nF4k461OGs556r_Yx4T_4LcLY2Hcls/edit#gid=0

Hubspot:
https://app.hubspot.com/contacts/5168264/contacts/list/view/all/?
*All stakeholders that were contacted in December have been logged in Hubspot
*Useful filters:

- FarmEd SMS sent/replied
- Job title ➜ Farmer
- Relationship status ➜ FarmEd

Govi nena research + market validation:
https://docs.google.com/document/d/1ZNOeJDcGntTU_B2qWsoG2BLfPvMO805wdZUeprvT77M/edit

FarmEd I - Important links
https://docs.google.com/document/d/17wAxkAMEvj1dpDD4hAqNSClSUUUFuvsbFsMAruNyy3Y/edit