Title: Commercializing Weather Prediction
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√ We apply to Student Prize.
√ Please keep our idea confidential. We disagree to publish it on the website.

1. Key Concept and Business Impact on Society and Environment

Information received beforehand not only prevents negative consequences but also improves the current scenario. Today modern technology enables extremely accurate weather mapping but the main loophole lies in the accessibility of this technology to the regular farmer. There is not much technical support being given to agriculture and farmers and most of the agro industries are ignorant about the forth coming events, like any sudden change in weather, and as a result incur huge amount of loss every year. **Monitoring the clouds** in regular intervals predicts the conditions in the given region regularly. Interpreting this vast volume of information for the benefit of the common man in itself is a huge task which requires specialized skill. Supplying easily interpretable information to the agro industries and insurance companies would strike a change in the economical and social structure of the region. This piece of information warns every person of the consequences of his moves in the related field and hence ensures his well-being. On the other hand, insurance companies can use this information to suit their business strategies in that region and modify policies accordingly. This saves the insurance companies from insuring some businesses which were to face a threat from the oncoming weather and thus save themselves from huge unseen losses. On the same lines, banks and other monetary institutions can reconsider their decision on loaning money to any agro company or any beneficiary of agro business based on the predictions made from cloud monitoring. The information is supplied to all the parties, giving each an opportunity to monitor their level of expected success/failure and make the necessary changes according to the situation.

2. Business Model Structure

In order to maximize the profit margin, coverage and efficiency of this business plan, a chain approach to the entire process has been used which spans many different business circles thus helping bring together many institutions. Our final aim would be to improve efficiency of the agriculture industry and to bring safety and predictability to this inherently uncertain sector. The data in its raw form received at the ground stations across the country shall be compiled and brought together at our main base ground station. This data in its raw form would basically contain temperature gradient information. This would be given to the commercial wing of ISRO that is ANTRIX which, as a part of their commercial endeavours will convert this data into temperature based map patterns and gradients in a readable format. In return we shall obtain finances as a part of the agreement. For ANTRIX, business feasibility is guaranteed as this data would be of high value by many institutions for analysis and research. After interpreting, data in the readable format will be regained back from ANTRIX and also ANTRIX can keep the data. The final interpreted data would then be provided to various agricultural and financial institutions which would then execute their business strategies accordingly. Mainly there are two business chains, one branching out from ANTRIX and the other branching out directly.

ANTRIX is free use the data for its business endeavours. As a part of the deal for the institutions which obtain data from ANTRIX, they would pay ANTRIX and also provide us royalty for we are the primary source of data. The data will be available as a commercial package with a price tag and with a 5 % royalty to us. This would ensure continuous funds and an increase in the customer base will immediately reflect in the returns thus making sure that the initial costs are recovered and substantial profits are made.

The returned data is of main importance to us, and this data basically draws all the agro based industries and monetary institutions and this is what forms the basic chain of the business flow. The institutions named below would accept this data so that analysis could be performed from the eyes of weather experts to predict how temperature variation and varied winds could affects local climates over time.

The institutes based in India to whom the interpreted data will be supplied are:

1. National Institute of Agricultural Extension Management. Farmers and the people directly involved in field work will be informed of the oncoming events on regular basis.
2. Food processing industries like Spectrum Industries, Manglore, and Muez Hest India Pvt Ltd, Munbai.
3. Fertilizer industries like East Coast Seaweed Inc and Suboneyo chemicals pharmaceuticals Pvt Ltd.
4. Dried flowers and petals based industries like Mother Herbs and Green Earth Products.
5. Insurance companies like LIC, L&T Insurance.
6. Monetary institutions like HDFC, ICICI, KVG and State banks.

The institutes based in Brazil to whom the interpreted data will be supplied are:

1. HC Comercio Exp. Ltda
2. Manchuria Trade
3. Los Grodo
4. Companies like Monte Pascoal, Alonso Menendez and Dona Flor, which produce pure Brazilian cigars and hence would need Brazilian tobacco only.
5. Finance and insurance companies like Itausa, Itau Unibanco, Banco Bradesco, Banco do Brasil.

Service provider is the upcoming student satellite Parikshit, in India. There will be in total 6 ground stations, 3 in India and 3 in Brazil, which would collect the data from satellite and send it for processing. * Frequency of data received at these ground stations i.e frequency of service* The data will be priced differently for different line of clients. Brazilian clients will have to pay a bit more than Indian, accounting to duties. For an Indian industry, data will be priced at 0.0019M$ per month. For an Indian Financial and insurance institution, data will be tagged at 0.02M$ per month. And data will be sold to National Institute of Agricultural Extension Management for 0.002M$ per month. A Brazilian Finance and Banking institution has to pay 0.032m$ per month and an agro based industry has to pay 0.026M$ per month, to obtain the data.

3. Business Feasibility

The total amount of cost that is expected to be incurred is shown in the cost table below.

	Cost (M$)
Low level Bus	0.5
Payload – IR Thermal Sensor	0.5
Ground Station related costs	1.6
Launch related costs	2
Total	4.6

Considering the pricing and approximating the number of potential clients in the early stages,

the revenue generated can be calculated as shown below.

	Comapny	Total number of companies expected	Price to be paid by each company per month (M$)	Total cost
Indian				
	National Institute of Agricultural Extension Management	1	0.001	0.001
	Finance and Banking	3	0.02	0.06
	Agro based industries	2	0.019	0.038
Brazilian				
	Finance and Banking	1	0.032	0.032
	Agro based industries	2	0.026	0.052

It can be inferred from the table that the total revenue generated per month will be 0.216, and hence 2.592 per year. The net cost incurred, including the operational cost is 4.6M$. As the satellite used for the purpose is a nanosatellite, considering the operational period of the satellite to be 2 years, the net revenue generated would be 5.184 M$. Hence there is an appreciable margin in the returns, which validates the feasibility of the plan.

4. Logistical Feasibility
Due to the inherent uncertainty and yet extreme importance of the agriculture industry, the government plays a very important role in maintaining the stability, providing regular funding and support. Since our project majorly works for the benefit of the same, we aim to approach the government of India, specifically, the Department for agriculture to provide us with the logical support and the initial capital for this endeavor. A major advantage of involving the government would be a uniformity and stability in the entire business. This is extremely crucial in the first few years of the business. Standardization and regularity would ensure the smooth funding of the project and ensure its success. Auditing also will become easier. Payload of the nanosatellite will be IR Thermal Sensor, with a low level bus. One satellite in this regard will be sufficient to meet all the needs and as it non-specific about orbit, it can be sent as a piggy back with any other major satellite. The only requirement in terms of orbit for the satellite is that the orbit has to be sun synchronous. ANTRIX has openings for launch of satellites, as one of their business endeavors.

5. Risk Analysis
Like all business chain ideas this plan suffers from the chance of a break in the chain that is even a single company failure can affect the entire chain. Starting from the first block in the chain, if there is any malfunction in the satellite, then the readings themselves will be wrong and hence the whole chain gets affected. Another major risk involved is data processing.