AGRITECH STARTUP

BUSINESS PLAN

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EXECUTIVE SUMMARY

INTRODUCTION

Agriculture is a vital part of a country's economy, but is dependent on an uncontrollable factor – the weather. Farmers in India are having a real struggle with rain and mostly rely on their inner intuition about big decisions, such as when to plant the seeds. Although the weather is uncontrollable, the technology nowadays makes it predictable. By anticipating, farmers can make better decisions and lower the risks to a minimum. While weather is the most common problem in agriculture, the farming process is complicated and farmers face many other problems, related to the labour, machine rental, barren lands, etc. Many companies offer advanced smart software that helps farmers with one or more phases in the farming process.

ABC is a start-up agrotechnology company in India that offers a complete solution for the whole farming process, with additional innovative solutions for the two phases regarding the labour recruitment and machines hire.

The purpose of this business plan is to analyze the external and internal factors that will determine whether the company will succeed on the agrotechnology market in India.

EXTERNAL ANALYSIS

For each company that plans on entering a certain market, an external analysis is needed in order to understand the current market situation. In the following paragraphs, the agrotechnology market in India will be reviewed.

MARKET AND INDUSTRY OVERVIEW

Agrotechnology is a relatively new industry that has in scope the technological innovations in agriculture. Another term used in many reports is **Smart Agriculture**, which covers a wide range of technological solutions regarding various problems that occur in the farming process.

According to a report on Transparency Market Research, The Global Smart Agriculture Market is forecasted to grow at a CAGR of **13.5%** between the years 2017 and 2025, reaching **$23.44bn** by the end of 2025. In this report, the smart agriculture market is segmented on the bases of:

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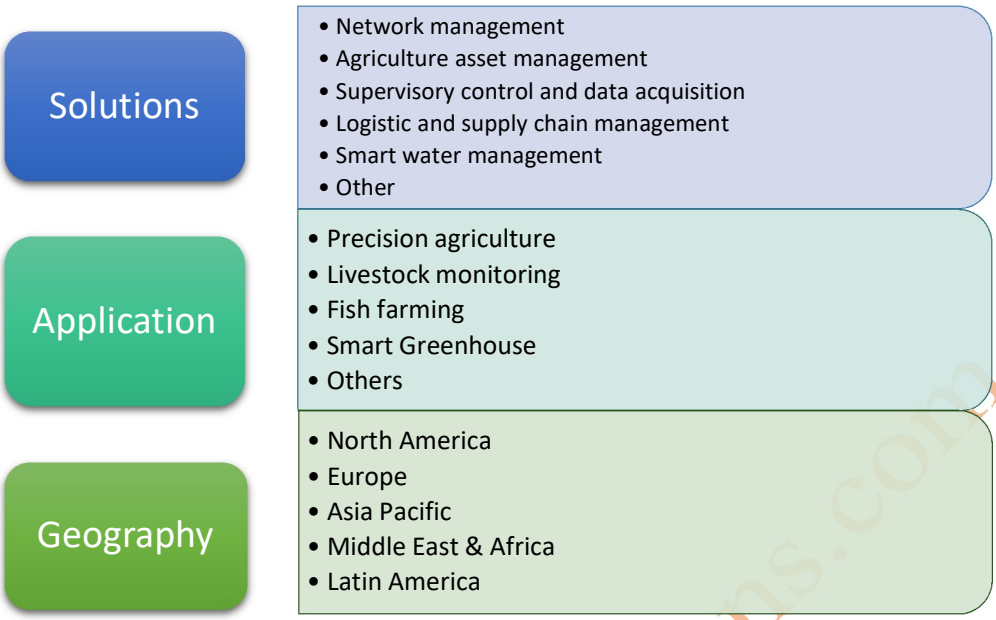

Regarding the segmentation **by solutions**, **the network management segment** held the dominant share of **21.20%** in the overall market in 2016. However, over the course of the forecast period, the **demand for smart water management solutions is expected to rise** at a higher pace. A major section of the agriculture sector still depends on vagaries of monsoon for farming. Smart water management and irrigation solutions have therefore become popular among farmers to boost their crop yield and ensure minimum water wastage.

The analysis from the same report shows that when analyzed **by application**, **the precision agriculture segment** held the leading share of **49.09%** in the overall market in 2016. The practice helps farmers grow high quality crop with less human effort, which are key factors fuelling the demand for precision agriculture around the world. Another report which offers a **different segmentation by application** (soil and crop management, fleet management, storage and irrigation management, and indoor farming), states that as of 2016, **40%** of the global market share came from **soil and crop management**.

If analyzed **by region**, North America is the leading market by revenue, but the Asia Pacific Region is the key emerging market.

AGRICULTURE IN INDIA

Agriculture plays a vital role in India's economy – contributing to **17.4%** of the country's GVA in the year 2016-17, with **54.6%** of the population being engaged in agriculture and allied activities. The contribution of agriculture to the Indian's GVA is experiencing a

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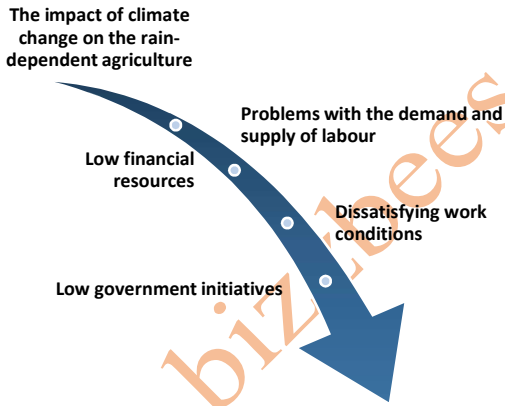
continuous decline in the last few years (from 18.6% in 2013-14 to 17.4% in 2016-17) due to the country's fast-growing and structurally changing economy.

As per the land use statistics 2014-15, the total geographical area of the country is 328.7 million hectares, of which:

- Reported **net sown area** is 140.1 million hectares (43% of the total geographical area).
- The **gross cropped area** is 198.4 million hectares with a cropping intensity of 142%.
- The **net irrigated area** is 68.4 million hectares.

These numbers suggest a **low productivity**; compared to China, that according to an article on Forbes has almost 40% less water and a smaller average land holding than India, the low productivity seems even larger, since China has almost double of India's productivity.

The low productivity is a result of the **many problems** that people involved in the farming process face:



The solution to these problems lies in the rising number of **technology start-ups** in India, who offer advanced solutions that can increase productivity and contribute to a sustainable farming, increase in production and lowering the risks.

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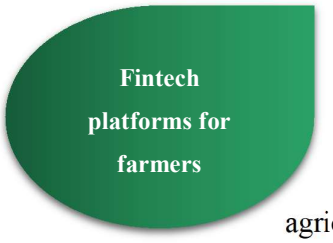
AGRO TECHNOLOGY TRENDS IN INDIA

According to an article on the Agritech Innovation trends, in 2017, the Indian market was influenced by 5 key **trends**:

A concept which offers farming services and machinery rentals to farmers on a pay-for-use basis. FaaS **variabilizes the cost of farming** and reduces the need for capex making it relevant to small farm sizes and affordable to small and marginal farmers

The poor health of the Indian soil is responsible for one third to one half less productivity than the world average. Developing farm-specific, data-driven **diagnostics to determine soil health** was many companies' aim in 2017.

The supply-driven Indian agriculture is a reason for seasonal food inflation as well as significant food waste and value loss along the supply chain. While the homogenization of consumption trends makes the demand more predictable, the supply is less predictable – farmers' decisions on which crop to plant each year are often driven by the price of that crop the previous year. Market linkage models can help farmers with **the timely and accurate estimation of sowing and harvesting in the context of patterns in consumer demand**.



Though the number of institutional funding sources is growing, there is an opportunity for fintech to improve the landscape for funders by providing them better intelligence about the farmers they're lending to and farm credit-worthiness. The need for agricultural trade to go digital can be addressed, since the majority of farm's income is in cash, presenting an opportunity for **digitizing payments to farmers through payment gateways linked to their accounts**. Given increasing penetration of smartphones among farmers, this could come in the form of apps (in vernacular languages, high on simplicity and safety) and platforms that connect farmers digitally with rest of the trade.

For the first time in Indian history, **horticulture production has outpaced food grain production** - Solutions that can preserve the quality, reduce waste, improve traceability, and improve shelf-life efficient aggregation, transportation and storage are in need.

TARGET MARKET

The company's target market can be a defined as a chosen segment with an identified need of the company's product and a purchasing power to buy the said product. ABC has many potential target markets considering the different solutions that their products offer:

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	Labour	Machine Owner	Farm Owner	Producer Org	Contract Farmer	Cooperative	ABC
Alpha People	X		X	X	X	X	X
Alpha Machine		X	X	X	X	X	X
Bravo			X	X	X	X	X
Charlie			X	X	X	X	X

- According to an article on Forbes, the global smart farming market is expected to reach $12bn by 2021 and **India** plays an important role, being a home to **one-fifth** of the global smallholder farmers.
- Currently, there are approximately **120 million farmers** in India, out of which **30 million use smartphones** and have a basic understanding of technology.
- As per the 2011 census, **42.1%** of the total workers were **involved in agricultural activities**. There were 32.9 million workers in the State, of which 4.25 million are cultivators and 9.6 million agricultural labourers.
- **Villupuram** district in north Tamil Nadu has the **highest number of cultivators and agricultural labourers** at 3.7 lakh and 8.3 lakh respectively. The company can address this segment's need with the **Alpha People solution**.
- The average size of individually held farms is only 0.91 hectares, with **over half the farms smaller than 0.5 hectares**.
- Nearly three-quarters of farms are smaller than 1 hectare, accounting for only **30.2%** of the total cultivable land.

Tamil Nadu –Landholding pattern

Distribution of Number of Holdings and Area Operated in Tamil Nadu as per Agriculture Census:

Category	Number of holdings (lakhs)	Area operated (lakh. ha.)	Average size of holdings (ha.)

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Marginal (<1 hectare)	62.66	22.92	0.37
Small (1 - 2 hectare)	11.82	16.44	1.39
Medium (2 - 10 hectare)	6.53	22.03	3.37
Big (> 10 hectare)	0.17	3.5	20.59
Total	**81.18**	**64.89**	**0.8**

COMPETITION OVERVIEW

On the Indian market, there are around **300 agro-technology start-ups** that are doing well on the market. To understand which competitors can be considered as direct and close, their solutions must be analyzed. To find the best agritech startups in India, several lists were analyzed and companies that offer a similar solution to ABC are presented below:

COMPETITORS THAT OFFER SIMILAR SOLUTIONS TO **BRAVO**

Cropin	Cropin integrates the agricultural sector with Information and Communication Technology (ICT) by putting a network of ERP and BI (Business Intelligence) across rural India. By doing so, the agritech startup collaborates with the different value chain participants along the supply chain to monitor farm produce status closely. The agritech startup provides farm businesses a farm management software and mobile app, which enables them to do connected and data-driven farming.
Products	Smart Farm, Smart Risk, M warehouse, Smart Sales
Concept	Big Data analytics, Artificial Intelligence, Geo-tagging & Satellite monitoring to revolutionize the agro-ecosystem.
Market	Present in 12 countries with a customer base of 120 clients and enriching the lives of 500,000 + farmers. The startup claims to have digitized about 2.1m acres of land.
Funding	The Bengaluru-based agritech startup raised an undisclosed amount of Pre-Series A funding from Singapore-based Beenext, Ankur Capital and Invested Development. With this round of funding the total funds raised by the startup has increased to about $4m. In 2016, the startup had raised $2m from Denmark based Sophia Investment.
Appeared in	List 1, List 2 and List 3.

	Engaging in precision agriculture, Aibono helps small farmers gain from economies of scale by sharing resources and expertise. The agritech startup also advises farmers on the right amount of inputs to use for maximum yield.
Products	Agri 4.0
Concept	Farm Management-as-a-service provided on a sharing basis deploying a shared Farm Manager along with shared instruments mapping the data onto the cloud. Its centrally managed Data Science and Recommendation Engines enabled by its data scientists and agronomists give precise day-to-day interventions to farmers, enabling a 30-50% increase in yields. Uses Artificial Intelligence and Big Data too.
Market	Aibono has helped increase yields by nearly 50% for some 140 farmers it works within the Nilgiri hills in Tamil Nadu.
Funding	N/A
Appeared in	List 2 and List 1 (as Airwood – their previously registered name)
	Gramco's vision is to be a complete solution provider from the sowing to marketing, offering solutions for farmers, traders and food companies.
Products	Many solutions under the company's name, including one for Contract Farming
Concept	Through offering world-class infrastructure with Farm Extension Services, Inputs, Post Harvest Infrastructure and value addition, and assisting farmers to sell their produce at one location, it aims to truly empower the farmers.
Market	Gramco now offers value-added services to more than 3,000 farmers every season in MP.
Funding	The company has managed to raise $2.3m from The Samridhi Fund.
Appeared in	List 2

Other **Indian** companies that offer similar solutions are Farm ERP, Stellaps, Intello Labs, NubeSol, etc. More can be found on these lists: List 1, List 2, List 3, List 4, List 5.

To find the **global leaders** in this field, several lists and reports were reviewed. Companies that appeared on all the lists are Agrinavia, Cropio, The Climate Corporation, Agrivi, Granular, etc. Others can be found on Link1, Link 2, Link 3, Link 4.

COMPETITORS THAT OFFER SIMILAR SOLUTIONS TO **ALPHA MACHINE**

	EM3 Agri Services offers **machines rental** for the whole farming process: Land preparation, sowing/transplanting, crop management, harvesting, post-harvest farm management. Farmers can access these services through a mobile app, and can also seek assistance from the company's local fulfillment centre or "Samadhan Kendra.
Products	EM3 Agri Service – rent a machine
Concept	Farming-as-a-Service (FaaS) model.
Market	In the last three years, EM3 Agri has serviced more than 8,000 farms across central India. By August 2017, the startup was clocking average monthly sales of $156K.
Funding	In August 2017, EM3 Agri secured $10m in Series B funding from UK-based Global Innovation Fund (GIF) and existing investor, Aspada Investments. In June 2015, the startup raised $3.3m Series A funding from Aspada Investments.
Appeared in	List 1 and List 2
	Ravgo.com aims to bring access to modern technology to small farmers who cannot afford the ownership of expensive farming machinery.
Products	Machine rental
Concept	The company has developed a simple to use application that allows browsing by required equipment and selecting time and date to book a machine that later needs to be accepted by the vendor. The application has an invoice payment software as well.
Market	N/A
Funding	N/A
Appeared in	List 1 and List 4
	Goldfarm is building a platform where farmers can access products and services that they will need for agriculture. The company aims to work closely with the Government and the farm equipment manufacturers to make farm mechanization affordable to small and marginal farmers.
Products	Machine Rental app
Concept	IoT for demand generation and tracking

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Market	The aggregator platform currently boasts a user base comprising of 25,000 farmers from three village districts in Karnataka and Andhra Pradesh. At present, it takes a 10% to 15% cut from each transaction.
Funding	The agritech startup which counts Mahindra & Mahindra and Infuse Ventures as its investors compete with FarMart and Trringo in this space.
Appeared in	List 1 and List 2

Other **Indian companies** that offer products that can satisfy the same need as Alpha Machine are: Kamal Kisan, farMart, Agroman, Oxem Farm, etc.

During the competition research, no companies that offer solutions like Alpha People or Charlie were found. There are many companies that offer farming solutions, but ABC's **competitive advantages** - the concepts of Alpha People and Charlie promise a great success in the Indian agro-technology market.

The direct competition analysis suggests that while the market is **competitive**, there are **no entrant barriers** for a company like ABC, the market has a **high potential** and **high consumption power**, considering the huge number of farmers and their quick adoption of such farming technologies.

GOVERNMENTAL OVERVIEW

The Government in India is trying to address the many problems in agriculture by several initiatives that could have an impact on ABC:

- **Computerization of Primary Agricultural Credit Society (PACS) -** The Government of India is going to provide Rs 2,000 crore ($306.29m) for computerization of Primary Agricultural Credit Society (PACS) to ensure cooperatives are benefitted through digital technology.
- **Soil health improvement** - Around 100 million **Soil Health Cards** (SHCs) have been distributed in the country during 2015-17 and **a soil health mobile app** has been launched to help Indian farmers.
- **Encouraging innovation and entrepreneurship -** The Government of India is introducing a new AGRI-UDAAN programme to mentor start-ups and to enable them to connect with potential investors.
- **Increase in minimum wages –** Another Government initiative is the almost double increase in minimum wages for unskilled and skilled agriculture labour, ranging from

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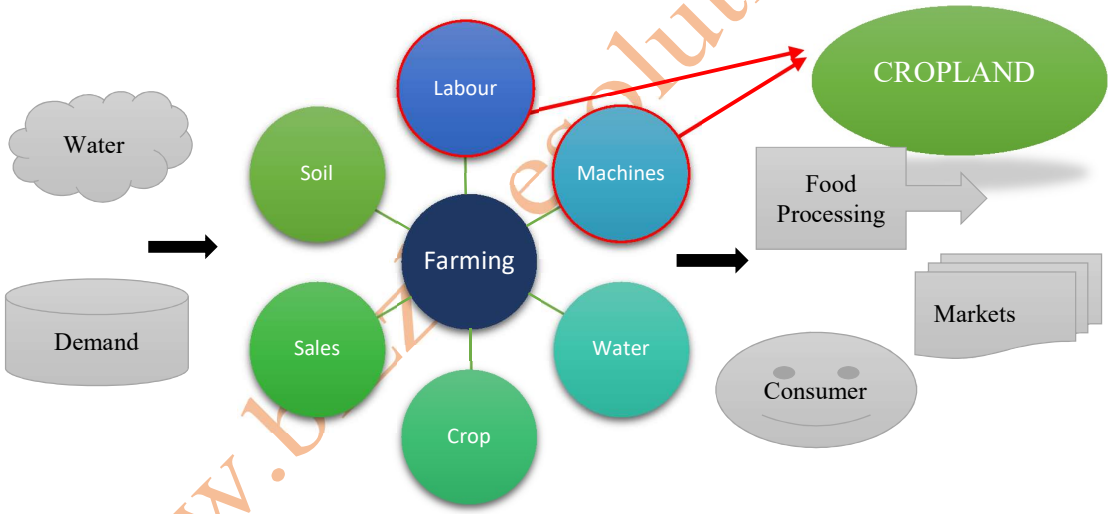
Rs 300 per day (unskilled worker in C-category towns) to Rs 395 per day (skilled worker in A-category towns).

INTERNAL ANALYSIS

The purpose of the internal analysis is to determine the company's condition, identify its strengths and weaknesses, its goals, the strategies used to achieve those goals and its organizational structure.

BUSINESS MODEL

ABC will be a start-up agrotechnology company based in India. ABC would try and address the agriculture labour, mechanization and integrated farming areas. Primarily, it would bring the gap between farm owners/producer organizations and the labour and machine owners. It also tries to address the inefficiency in the farm management thus providing solutions and services to maximize production quality and quantity.



The company will offer 3 different solutions for the human resources challenges, mechanization challenges and farm management challenges, satisfying three different segments – Farm owners, Agriculture labour and Machine owners.

Mission: *"ABC's mission is to bring collaboration and business intelligence together in one platform, which enables ignorant and passionate farmers to actively take part in cultivation using advanced tools and technologies available to plan, manage and produce quality crops to the maximum potential that the farm land offers."*

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Vision: "*In 5-10 years, we see ourselves as one of the key players in small and medium farm owners/produces, actively producing the quality crops and maximize their revenue to the potential offered by their lands.*"

To achieve its goals, ABC offers an integrated farm management platform which addresses almost all pain in areas like labour, machines and business intelligence. Also, the social media aspect will keep the farming community engaged that allows farm owners and cooperative organizations to apply various policy initiatives quickly and effectively. The labours on the other hand, will get visibility and an increase in the total number of employed days in a year. ABC will engage in precision agriculture, the company will help small/medium farm owners gain from economies of scale by sharing resources and expertise.

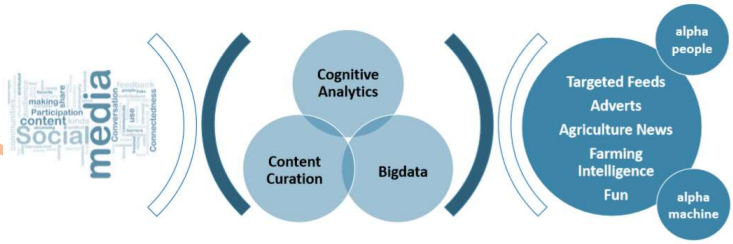
MARKETING PLAN

The marketing plan is conducted in 4 main subchapters that cover the strategy for each product of the marketing mix: The product, its price, its promotion and place.

PRODUCT

ABC will offer **3 main products/services**:

1. ***Alpha - Farmers Social Media along with Resource Management*** that addresses the labour (Alpha People) and machine rental (Alpha Machine) challenges in India'a agriculture.



- Alpha People (worker.farm) application **features**:

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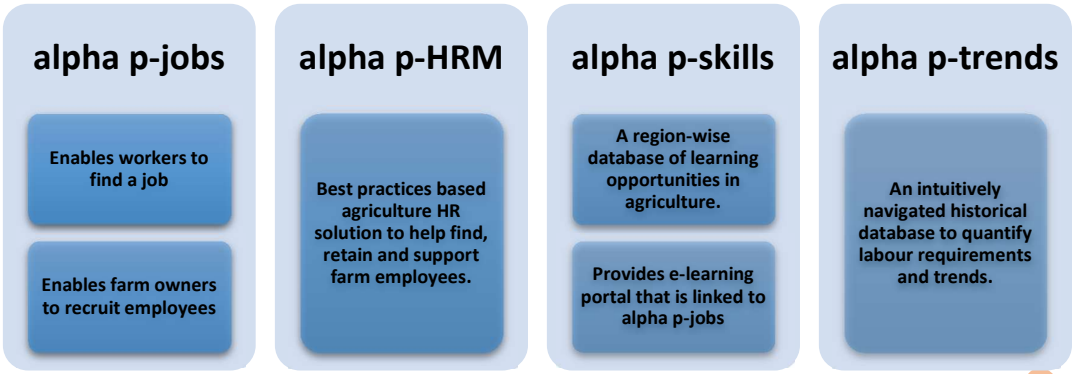
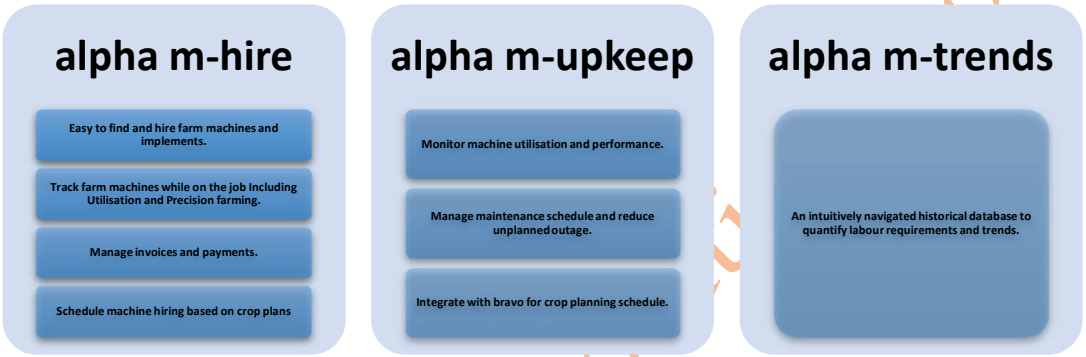
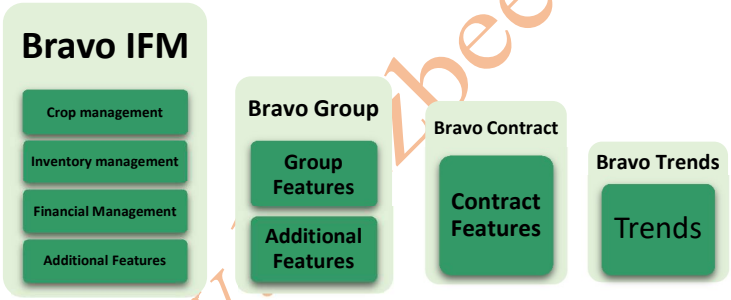


- Alpha Machine (machines.farm) application **features**:



2. *Bravo - Precision farming solution*



BRAVO IFM	BRAVO GROUP	BRAVO CONTRACT

Crop management Plan, monitor and keep record of all farming activities during the cultivating season. Detail tracking of quantities and cost of all inputs and resources, such as workers, machines, seeds, fertilizers, plant protectant. Use predefined farming task templates and schedules or create customized schedules. View activities on the calendar and track them on the map. **Inventory management** Register all material purchases. Automatic recording of material application via farming task. Support multiple storage locations. Inventory reports and detail transaction records. Usage and cost of all resources, workers, machines, materials per field and cultivation. **Financial management** Record all sales & purchases. Sophisticated generation of available crop quantities for sale via harvest tasks. Smart financial analysis: Profitability analysis per field, crop and farm. Cost analysis and breakdown for each cost category. Automatic allocation of fixed costs to fields and crops based area or yield. View interactive dashboards and generate reports. **Additional Features** View fields, cultivations and tasks on the map, complete database of pesticide products, document uploads, register lab results for soil, water and leaf analysis	**Group Features** Plan, monitor and keep record of all member farming activities, from soil preparation and tillage until harvest. Detail tracking of quantities and cost of all inputs used such as labour, machines, seeds, fertilizers, plant protectants. Use predefined farming task templates and schedules or create your own. View your activities on the calendar and keep track of them on the map. **Additional Features** Dedicated farm management for each group member. Integrated administrative console for all group members, farms, fields and cultivations. Consolidated field mapping for all members, per cultivation, fast task and harvest recording for multiple fields, cultivations, varieties and locations. Manage multiple groups.	**Contract Features** Manage contract terms, quantities, prices, varieties, covered costs, producers farmers. Record all pre-payments, purchases, deliveries, packaging, sales and returns. Generate inventories balance per farmer, and packaging facility. Calculate amount due per farmer based on individual or group price. Support multiple packaging, transportation and handling cost per packaging facility, customer and sales location. Handle buy, contract and sell price for contract materials. Unlimited contracts, unlimited farmers. Integration with bravo IFM.

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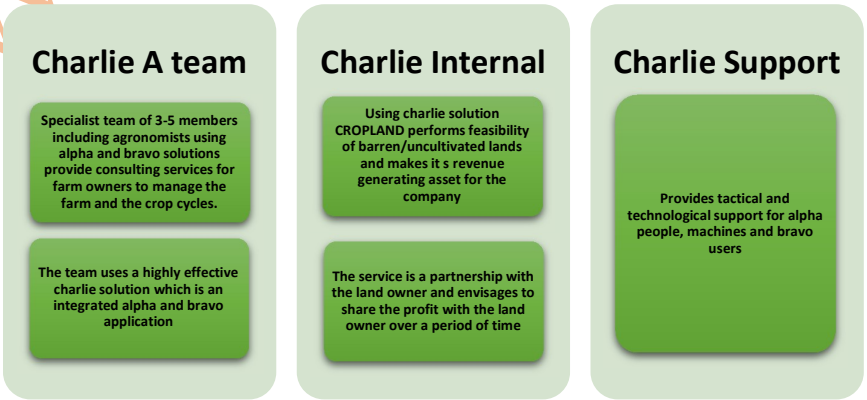
3. *Charlie – Transformational farming*



PRICE

The company's products will be sold at the following prices:

Alpha	**Free for download**
Bravo IFM	INR 5000 per year
Bravo Group	INR 10000 per year
Bravo Contract	INR 15000 per year
Charlie	Not yet determined

Since the competition's prices are unknown, no price comparison can be made.

PROMOTION

Promotional activities can be crucial for a company that is new on the market. All promotional tactics should come from the **marketing strategy** that the company plans on implementing in order to achieve its **goals.** For a start-up company, the goals should be focused on **achieving brand recognition** and then **brand awareness,** which in the long run would contribute to customer loyalty. In the beginning, a strong media presence is a good choice to achieve brand recognition. Considering the nature of the business, the accent should be put on **online presence**, since the number of Indian farmers that own a smartphone is constantly increasing. However, no marketing strategy is effective with no **brand and logo** and no focus on the **target audience**. ABC could use some of the following strategies:

- **Paid advertisements (banners) on popular farm magazines in India** – This is a good way to ensure that the target audience is reached. Primer research must be done to determine whether farmers usually spend time reading farming news. If not, online ads can be bought on other websites that Indian farmers usually visit.
- **Social Media Presence** (Facebook, Twitter, Instagram, YouTube) – The power of social media is real, and since more and more farmers use smartphones every day, a strong presence on every social media is a good step towards brand recognition.
- **SEO – Search Engine Optimization** – Search engine optimization is the key to enriching the potential customers list. It is an easy and relatively inexpensive way that can help with brand recognition.

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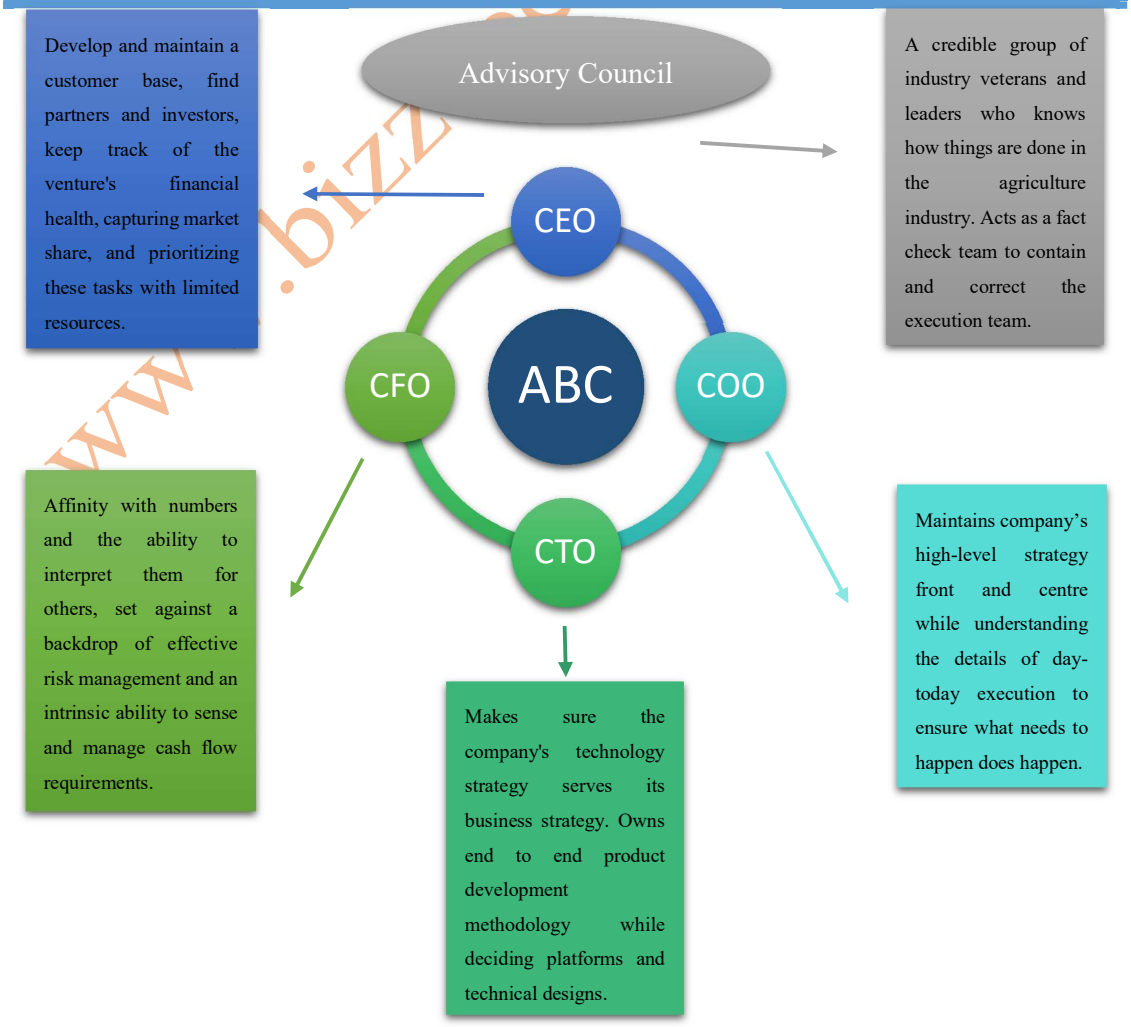
- **Trade shows and other farming related events –** Event marketing is big these days – it gives the opportunity to network, get to know potential customers and participating in these shows as an exhibitor allows you to present your solutions in the best light possible.
- **Free trial –** People love free samples, a free trial can help customers experience the product/service and understand its benefits. It can influence the decision to buy even more than any other marketing technique.
- **Email Marketing & Database Marketing –** These strategies can be used when a potential customer database is made. Hosting an event to promote the product/service can be a good way to collect free information from potential customers.
- **Additional trips and tricks –** Marketing is always changing, so entrepreneurs that want to create effective marketing strategies must follow the hottest trends. Additional trips and tricks for more effective marketing can be found on the following links: Link1, Link2, Link3.

PLACE

ORGANIZATIONAL STRUCTURE



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SWOT & RISK MANAGEMENT

SWOT ANALYSIS

Strengths	Weaknesses
• A new, innovative solution. • The free social media for farmers is an added value. • Focus on current problems that potential customers are facing. • Strong proposal with effective solutions that promise an increase in productivity.	• Lack of marketing expertise. • New on the market • Limited financial resources.
Opportunities	**Threats**
• Favorable business climate. • Emerging market, possibilities for growth. • Government initiatives for agri-tech startups. • Increase in the number of farmers who own and use smartphones. • Angel Investors.	• Competitive landscape. • Possible laws and regulations regarding leasing of farm lands from aggrieved farm/land owners. • Farmers may find it difficult to adopt such new, advanced technologies.

RISK ANALYSIS

Risk	Probability	Impact	Total	Action
Lack of marketing expertise	**5**	**2**	**10**	**Risk Avoidance** Many entrepreneurs start a business with no previous marketing experience. Although marketing can be crucial for the company's success, it is a process that can be adopted with constant learning, or it can easily be outsourced by professionals in the field. The risk can be avoided by choosing one of the two possible options.
New on the market	**5**	**5**	**25**	**Acceptance** Every new and upcoming business faces a period when only a small amount of consumers are willing to trust a new brand on the market. This risk is understandable and the enterpriser must be ready to accept the challenge. However if the business manages to provide superior service and prove itself worthy in the customer's eyes, it can build a strong brand name that will bring customer loyalty.
Limited financial resources	**4**	**4**	**16**	**Mitigation** Funding is the number one possible solution for many startup companies. This risk can be reduced with a good investor's proposal that will make investors see the benefits ABC offers and decide to invest in the business.
Competitive landscape.	**4**	**2**	**6**	**Risk Acceptance** The positive business climate comes hand in hand with the competitive landscape of the market. But, ABC's competitive advantage lies in the innovative solution it brings on the market, which makes the competition less threatening. However, it is important not to underestimate and closely look after the competition.
Possible laws and regulations regarding leasing of farm lands from aggrieved farm/land owners.	**3**	**5**	**15**	**Risk Acceptance** Laws and regulations can be a tricky subject that may require legal advice. If certain laws are so strict that Charlie can't be implemented, it may be necessary to change the product/service according to the laws if possible, or not launch it at all.
Farmers may find it difficult to adopt such	**3**	**5**	**15**	

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new, advanced technologies.				

FINANCIAL ANALYSIS

FINANCIAL STATEMENTS

When looking at a specific company/business, the financial analysis is focused generally on the income statement, balance sheet, and the cash flow statement.

- The income statement is a financial statement that reports a company's financial performance over a specific accounting period. Financial performance is assessed **by giving a summary of how the business incurs its revenues** and expenses through both operating and non-operating activities. It also shows the net profit or loss incurred over a specific accounting period.
- The balance sheet is a financial statement that summarizes a **company's assets, total liabilities and owners' equity at a specific point in time.** These three balance sheet segments give investors an idea as to what the company owns and owes, as well as the amount invested by shareholders.
- Lastly, the **cash flow statement** details the **amount of cash and cash equivalents entering and leaving a company.** The CFS also allows investors to understand how a company's operations are running, where its money is coming from, and how it is being spent.

BREAK – EVEN ANALYSIS

If it is requested by the client, a Break-Even analysis can be included, which should **display the precise amount of products the client's business needs to sell in order to cover all of the business' fixed expenses and remain at a neutral balance of 0.**

Additionally, at the client's request, financial ratios can be included in the financial analysis too. These financial ratios are the relationships that are used generally for comparison purposes. The most common ratios are the return on investment (ROI), the return on assets (ROA) and the debt-to-debt equity. These ratios can help the client measure the progress against predetermined internal goals, a certain competitor, or the industry as a whole. Moreover, the various ratios can help in identifying trends in their early stages.

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