IoT Enabled Environmental Monitoring and Rottening Prevention Device in Onion Storage

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A SHIELD TO ONION

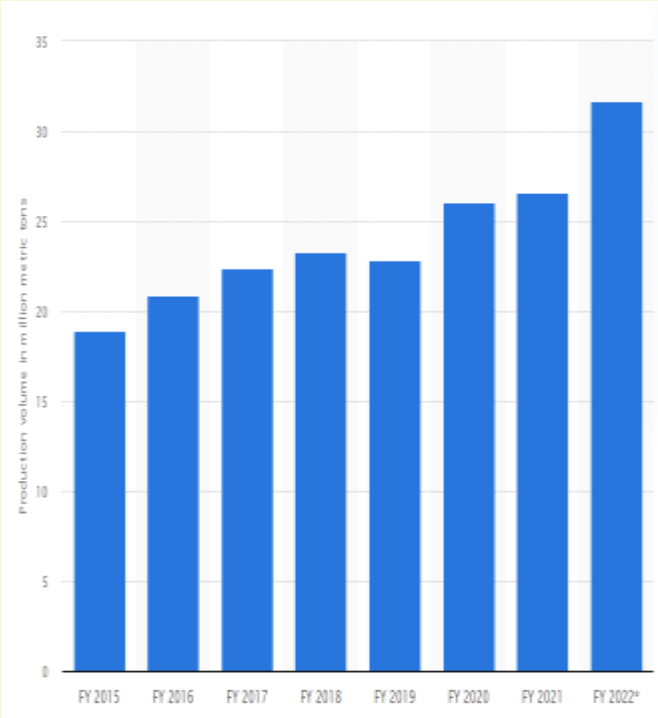
To Provide Environmental Monitoring and Rottening Prevention Device in Onion Storage

A SHIELD TO ONION

IDEA OVERVIEW

- India ranks second in onion production in the world.
- Onion acquired 6% share in the production of vegetable in India.

- IoT Enabled Environmental Monitoring and Rotting Prevention Device in Onion Storage.



PROBLEM STATEMENT

PROBLEM I

The Stored Onions are Mainly Wasted due to **Rottening & Sprouting.**

PROBLEM II

Increase in Temperature Causes **Weight Loss.**

PROBLEM III

Wastage of Onions Results in **Economic Loss.**

PROBLEM IV

Routine manual Inspections for storage facility is Impossible

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CUSTOMER PAIN POINT ADDRESSED

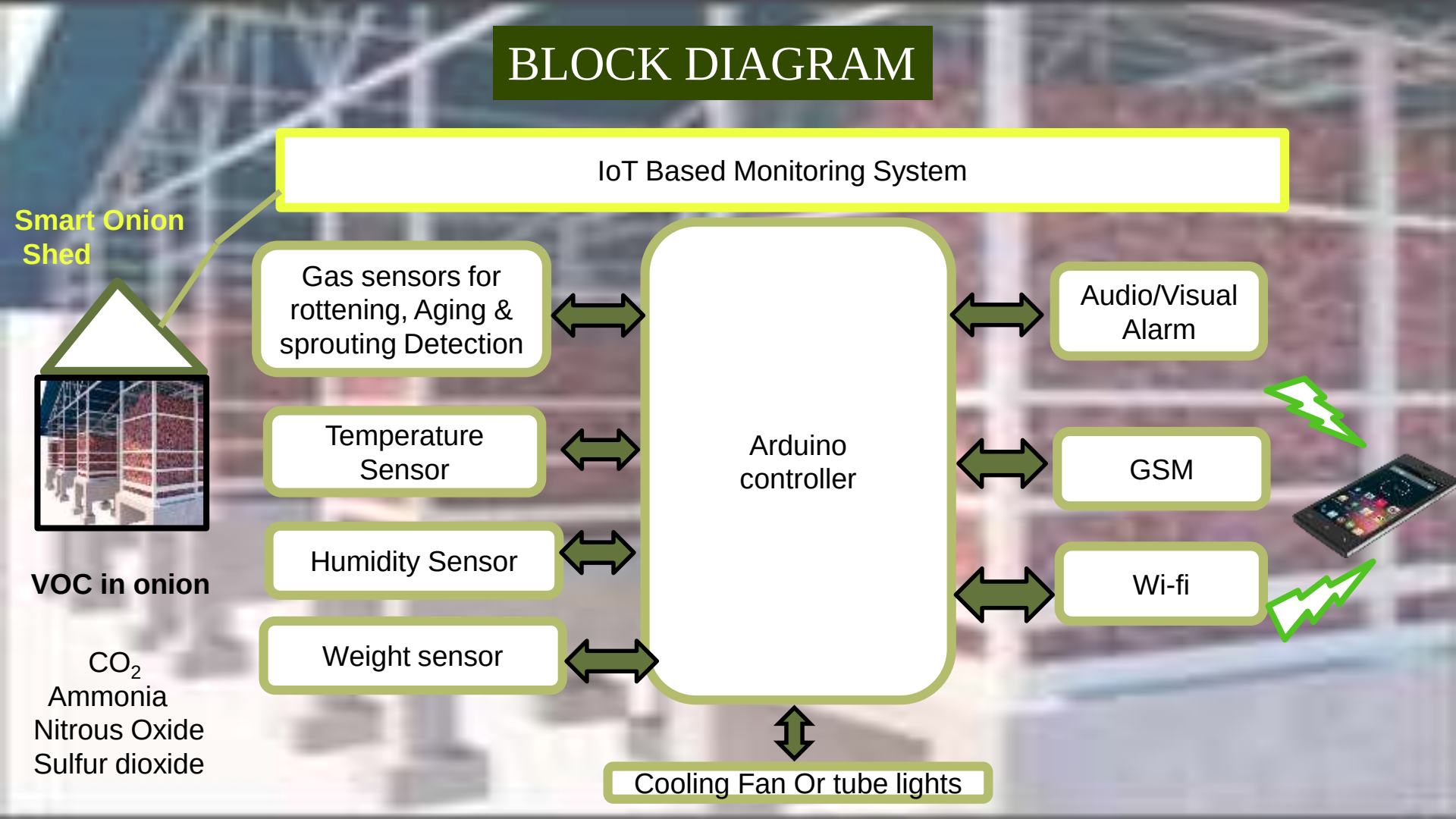
- During different seasons, the Indian climate is becoming more **unpredictable, creating unforeseen changes in temperature** and humidity. Onions are more likely to rot as a result. This causes rotting and onion wastage.
- As a result, it has a significant impact on the economy as a whole and the **financial situation of farmers and consumers.**
- As a result the **GDP of the country drops down**.
- It also causes stress to farmers during maintaining and **the manual work are not efficient**.

- No proper maintenance

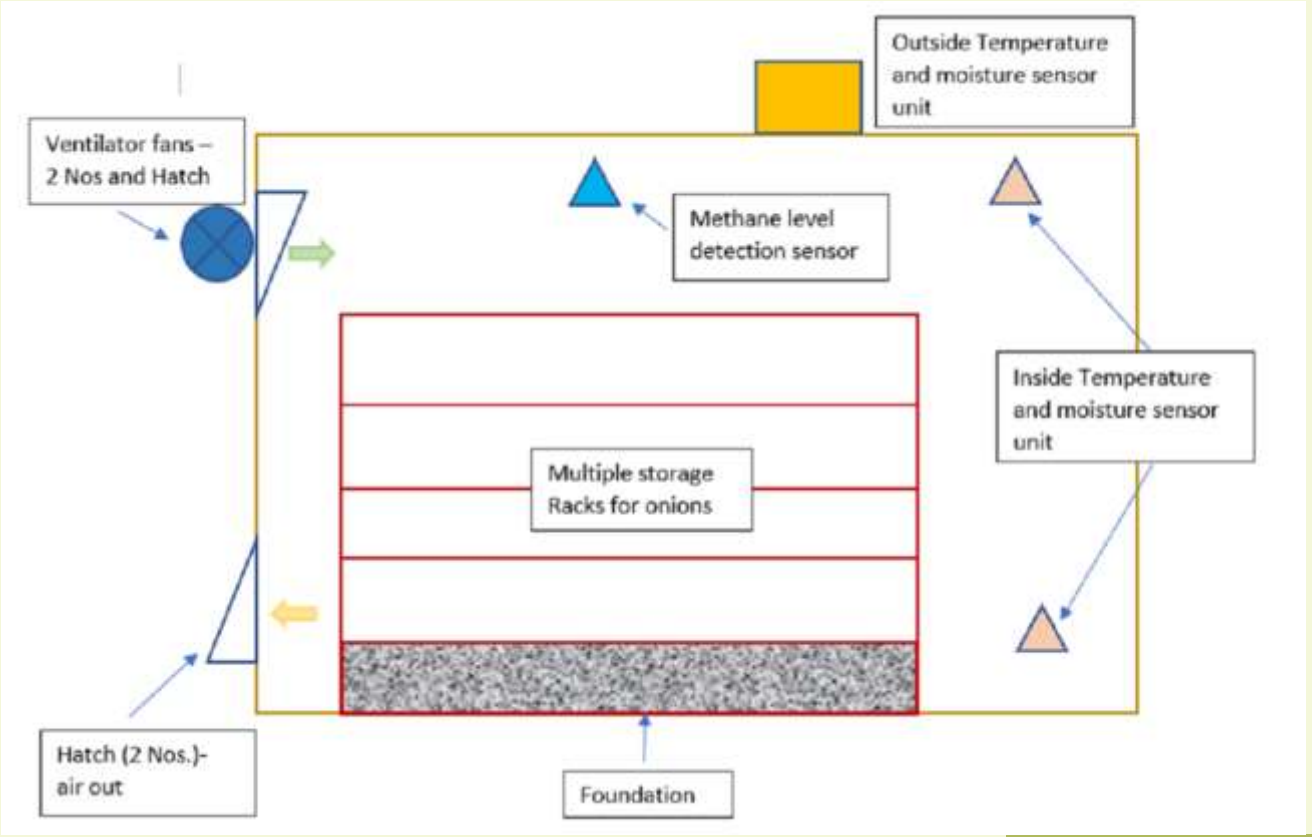
- Leads to rottening, sprouting and aging

- This causes loss for farmers and consumer and drops the GDP of country.

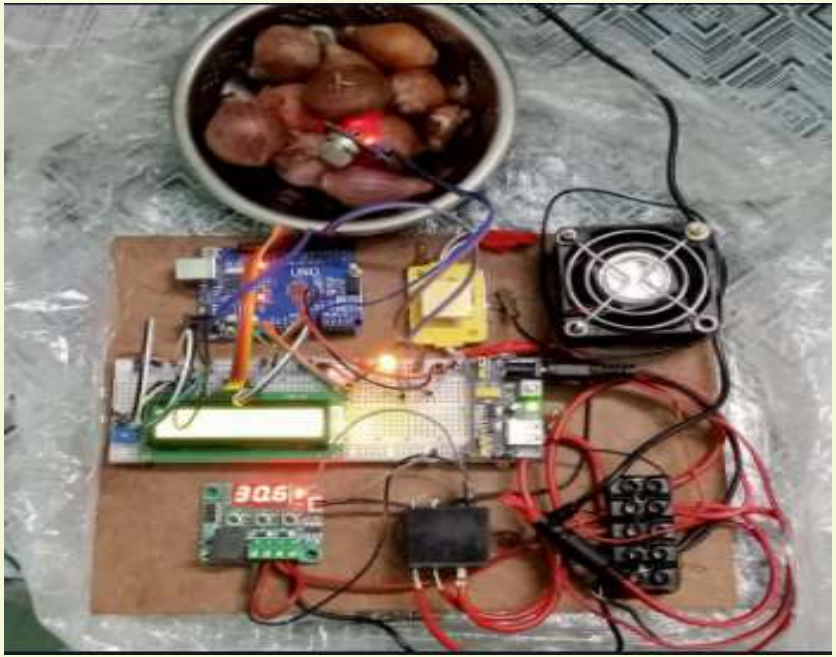
BLOCK DIAGRAM



PROPOSED DESIGN



PROTOTYPE



COMMERCIAL VIABILITY

- As we have designed our product only with the commonly used sensors and basic electronic components with standard processor, technically the project is viable.
- As we have used only commonly available low cost components, cost of the device must be affordable. For mass production, the cost of the device might be become cheaper.
- As the cost is affordable and the target customers are the farmers, commercially our product is viable.

Type of loss	Reported loss
Weight	20-25%
Rotting/ decay	10-12%
Sprouting	8-10%

Improper storage results in approx annual loss of ₹11,000 cr

FEASIBILITY

- **Conducted survey about the product demand** with local farmers in Madurai and virudhunagar. Also the use of commonly used sensors and basic electronic components with standard processor make the **proposed product design easier** and hence it is feasible to develop the proposed product.
- Our product is **simple and automatic.**
- At **affordable cost**
- Leads to **Happy farmers**





Business Model

KEY PARTNERS

- **FPOs**
- **Researchers** for further development.
- Direct marketing.
- Indirecting marketing through **Agri vendors**.

KEY ACTIVITIES

- ✓ Product Development.
- ✓ Market research.
- ✓ Business development.
- ✓ Marketing.
- ✓ Sales development.

KEY RESOURCES

- Gaining the **Patent** and **intellectual property** rights is in progress.
- **IoT lab** facilities.
- **R&D** organization.
- **Contracts** with farmers exporters and hotels

VALUE PROPOSITIONS

- **Smart Device** - Help the farmers to stabilize abiotic parameters in onion storage.
- **Prediction** of the onion rottening by detecting the **gases emitted** from onion
- **Customization** can be done for other vegetables also by modifying its features
- Farmer Friendly Product
- Affordable Cost
- Simple and Automatic
- 24X7 Monitoring
- Happy Farmer with more production

CUSTOMER RELATIONSHIPS

- Producers (Farmers) of onion
- Buyers and Exporters
- Agriculture Research Institutions
- Agri – SAAS companies
- Equipment renting/ lending companies
- R & D organization.

CHANNELS

- Social media marketing (Like Facebook, Instagram, Linkedin and Twitter)
- Video marketing
- Campus marketing
- By posters
- By making advertisement on television and
- Radio

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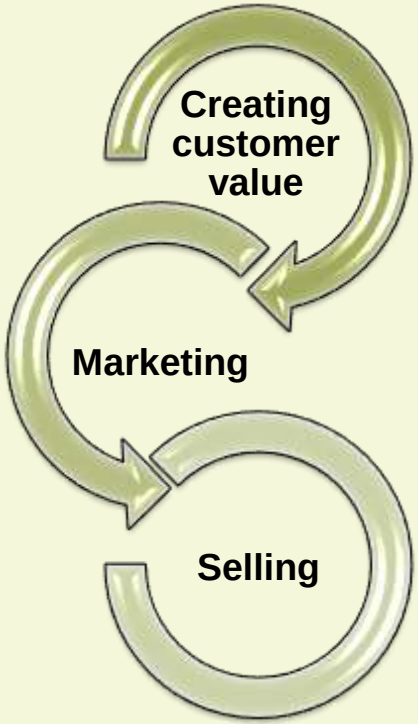
COST STRUCTURE

MVP-15000Rs – Single Unit

REVENUE STREAMS

- ❑ Creating **more number of customers** through **marketing**
- ❑ **Selling** more number of products
- ❑ Increase the **profit**

Revenue streams



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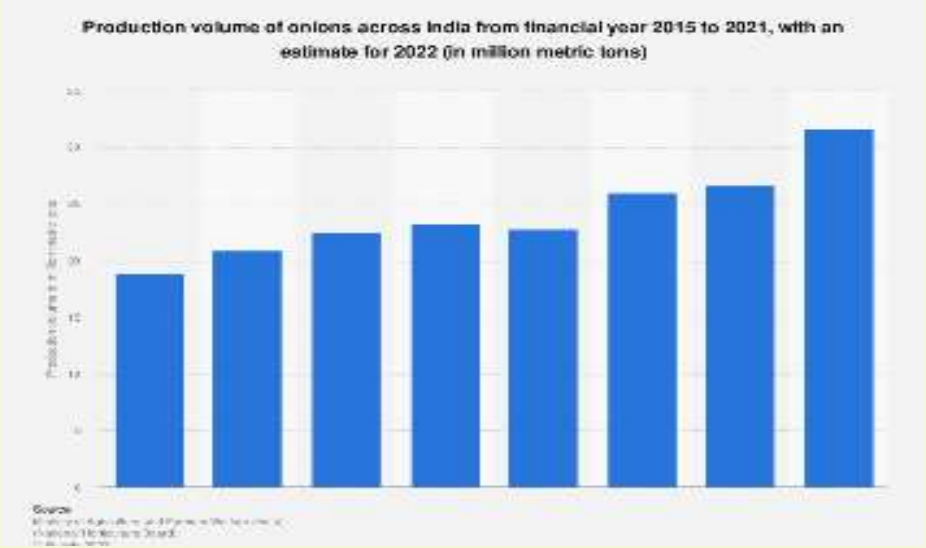
Customer Segment

- ✓ FPOs
- ✓ Producers (Farmers) of onion
- ✓ Warehouse owners
- ✓ Agriculture Research Institutions & Onion Research Centres



Maharashtra and Karnataka ranked the **highest for the production of onions** during the measured time period

SCOPE FOR PATENTABILITY

- Our product is the **pioneer** in the market, so we have greater scope to gain patent rights for our product.
- We are planning to obtain **patent** for our **product** and **design.**
- We are in the documentation process for now, once after the process we will file for patent.

THANK YOU

Project details

Project		Description	Budget	Status
	Mercury	It’s the closest planet to the Sun	$7,500	In progress
	Venus	Venus is the second planet from the Sun	$6,075	Delayed
	Saturn	It’s composed of hydrogen and helium	$13,050	Stopped