Group 3:

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Agenda

FoodPrint

- Vision
- Status Quo
- Problem
- Solution Overview
- Business Strategy
- Solution Design
- Product Features
- Demo

Vision

Vision

FoodPrint

Capture the journey of produce from farm to fork.

- Empower suppliers - Provide supply chain insights
- Enable markets - Provide traceability information
- Service consumers - Provide value-added produce information


GROWN by NATURE
WEIGH & PAY


oranjezicht city farm
activities and information - www.ozcf.co.za

Imagine

Status Quo

Status Quo:
Market Overview

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- WC has the **largest area** under organic farming management and the highest number of farmers
- Alignment between 2015 research study by S. De Villiers and OZCF customer insights
  - The aspects that increase customer trust are the packaging and label, as well as **knowing the origin or farm** that it comes from
  - Consumers placed importance on being able to gain **access to information straight from the supplier**
  - **“Being able to read the story behind the product”** was also a key factor that respondents mentioned would enhance their trust

Status Quo:
Industry Insights

FoodPrint

- Customer Interface - Serve knowledge hungry sustainability focused clients
  - OZCF
  - Harvest of Hope
  - Other Markets (10 in the Western Cape)
  - Supermarkets
  - Artisanal retailers (Zero waste stores)
  - Restaurants (Organic and artisanal)
    - 25 potential partners

Source:Africalist.com

Status Quo:
Industry Insights

FoodPrint

Suppliers - Smallholder and small commercial farms

- 9844 smallholder farmers in the WC as of 2012
- Phillipi Horticultural Area
  - 25 small commercial farmers
  - 5 large commercial farmers
  - 9 smallholder farmers
- Abalimi Bezekhaya

Source: iol.co.za

Status Quo:
Similar Projects

FoodPrint

eHarvest (South American)

- Inventory management system and order management system
- Aggregates multiple small farmers to fulfill a big order
- Have own token (EHH)

IBM Food Trust™

IBM Food Trust (Small Business Package)

- Starts at R1384 per month
- Offers various module
- Trace module offers end to end traceability
- Certificate module allows for the upload and management of certification documents
- Virtually guided on-boarding

Status Quo:
Similar Projects

FoodPrint

Abalobi (Potential Partner)

- Public Benefit Organisation
- Pilot program, Restricted to coastal areas
- Inventory management, analytics, accounting and communication
- 23 partner restaurants (mostly high end)
- Government partners

ABALOBI

FROM HOOK TO COOK

traceable, storied seafood by empowered small-scale fishers

TE-FOOD

TE Food (Global)

- 6000+ customers, 400 000+ operations
- 100 milion people served
- Have own token (TFD)
- SA focus is to “assist Governments and stakeholders in the supply chain to improve the standards of the local authorities regulations”

Problem

Problem

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What was sourced, when and from whom?

- No standard way of recording produce information between markets and farmers
- The sourcing of various produce changes with every market and it is hard to keep track of all the dynamic information

Where is it from and how was it grown?

- Consumers want to know where their food is from, how it was grown
- Due to the multiple sources for the same produce and weekly changes in sources and produce makes it hard for sellers to keep track of what came from where

Where can I find the information?

- There is no single source of information for what is available weekly and where it is sourced from

Solution Overview

Solution Overview

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Create an easy-to-use shared platform to capture and view produce information across the supply chain

How does it work?

1. Farmer enters harvest data

4. Produce transported

2. Market views harvest availability

6. Client views product information

7. Suppliers view information

3. Market orders produce

5. Market captures receiving of produce

Business Strategy

Business Strategy: Approach

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Phase 1:
Pilot and niche market

Phase 2:
Extend supply chain

Phase 3:
Expand product lines

Scope

- Simple supply chain
- Farmers' markets
- Niche fresh fruit and vegetables

- Complex supply chain
- Retailers
- Fresh fruit and vegetables

- Additional product lines (eg. meat)

Features

- Simplicity
- Enter data at 2 points
- View information

- Enter data at more than 2 points
- Create additional views
- Integration into systems

- Customise for different products

Business Strategy: Value Proposition

FoodPrint

- Financial Impact
  - Consumer receives value-added information
  - Potential increase in sales
  - Marketing through the platform
  - Partnerships
  - Platform subscription fees (market admin and suppliers)
  - Consulting and data fees (eg. monetise data)
  - Supply chain inefficiencies reduction
- Social Impact
  - Financial inclusion - farmers could get a credit score
  - Farmer access to new markets and bigger client base
- Environmental Impact
  - Encourage sustainable farming practices and locally sourced produce
- Educational Impact
  - Educate customers about the source of food

Business Strategy: Financial Assumptions

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			Phase 1	Phase 2	Phase 3
Cost	1	Development cost	x	x	x
	2	Marketing cost	x	x	x
	3	Admin and overheads	x	x	x
Revenue	1	Client premium	x	x	x
	2	Marketing through platform	x	x	x
	3	Partnerships		x	x
	4	Platform subscription fees	x	x	x
	5	Consulting and data services		x	x
	6	Supply chain inefficiencies reduction		x	x

Business Strategy: Financial Projection

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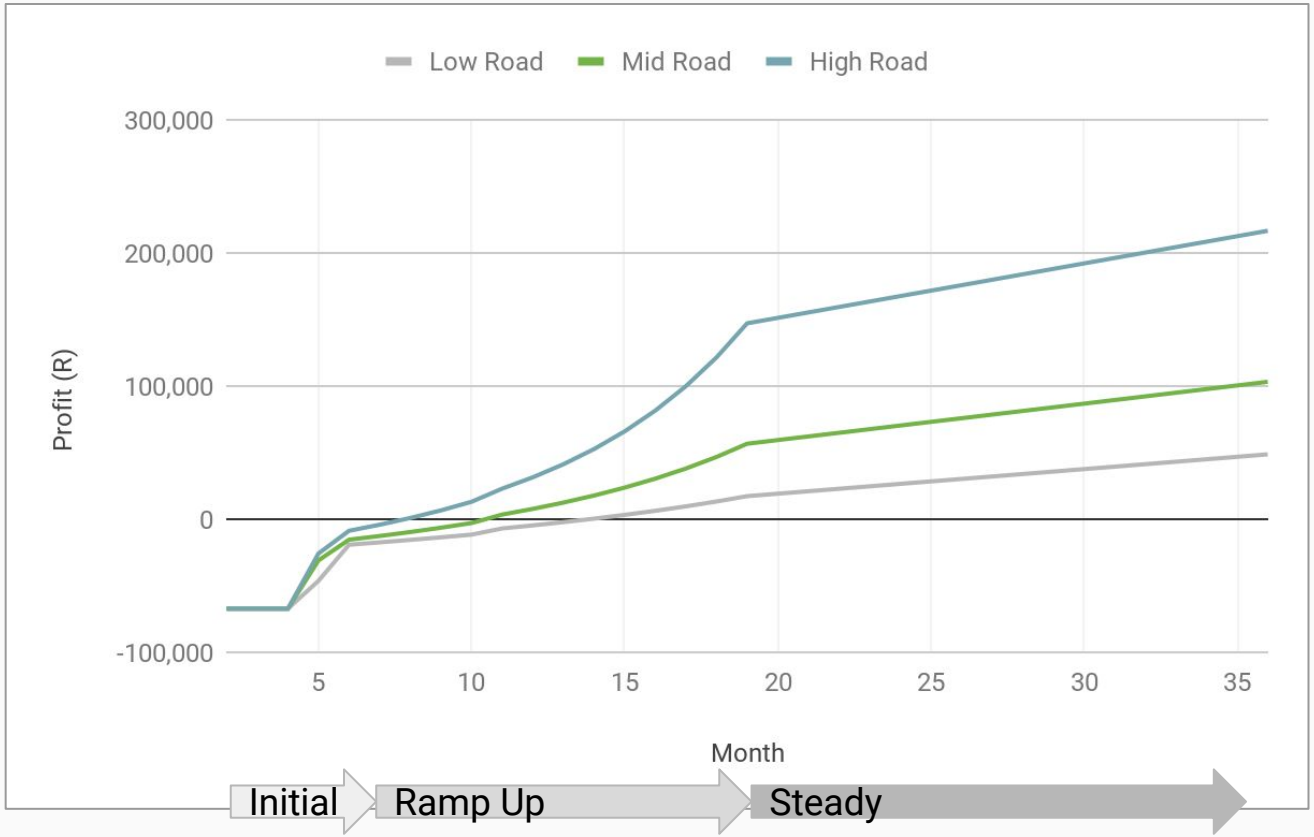

Key assumptions

- Only phase 1
- Market onramp differs per scenario
- Supplier onramp differs per scenario
- Standard Cost assumptions (variable and fixed)

IRR

- Low Road - 3%
- Mid Road - 9%
- High Road - 15%

Solution Design

Solution Design:
System Architecture

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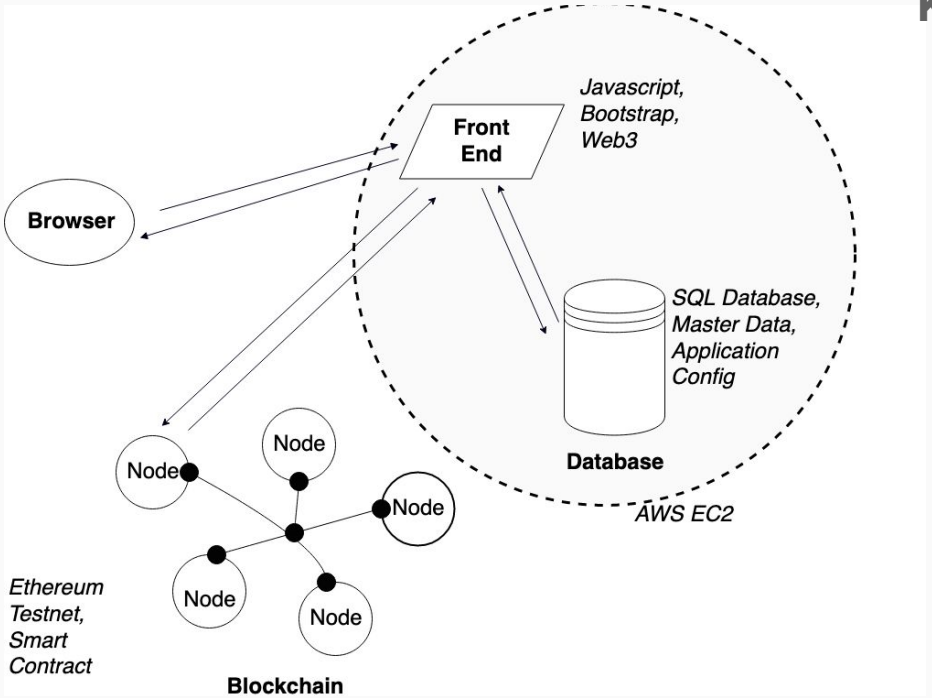
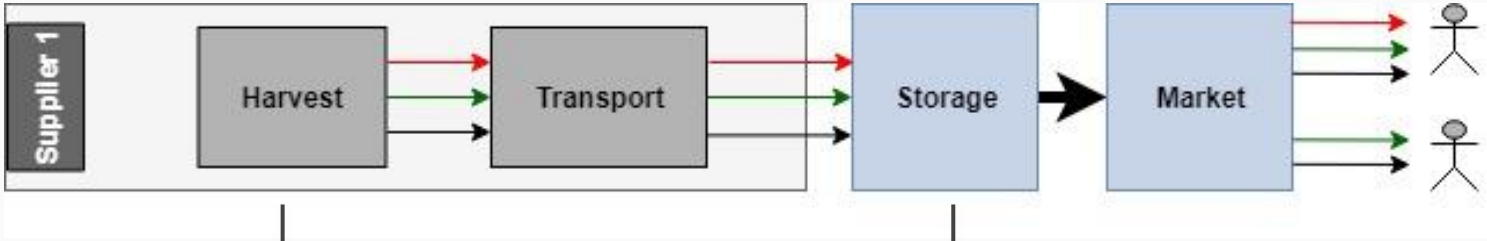


Key Components:

- Javascript front end
- SQL Database for storing Master Data (e.g. supplier farms, produce types, units of measurement etc.)
- Ethereum Testnet Blockchain for execution of smart contract and storage of produce data
- Web Application to be hosted on Amazon EC2 free tier
- Github repository https://github.com/jajukajulz/foodprint

Solution Design:
Proposed Data Structure: Blockchain

FoodPrint



Process	Field	Description	Example
Harvest	ID	Unique ID for product - supplier batch	1001
	productID	Unique product identifier	GRR
	supplierID	Unique supplier identifier	OZCF
	supplierAddress	Member address	0x460b...
	photoHash	Harvest photo	n/a
	harvestTimestamp	Date and time at which product was harvested	20190621 14:10:55
	harvestCaptureTime	Date and time at which data captured	20190621 14:20:55

Process	Field	Description	Example
Storage	marketID	Unique ID for market	OZM
	marketAddress	Member address	0x562...
	quantity	Number of units received	20
	unitOfMeasure	Type of unit	bunches
	storageTimestamp	Date and time at which units received.	20190621 16:10:55
	storageCaptureTime	Date time at which data captured	20190621 17:10:55
	URL	URL for central DB	
	HashID	Hash of linked information in the central DB	a076gh...

Solution Design:
Proposed Data Structure: Central Database

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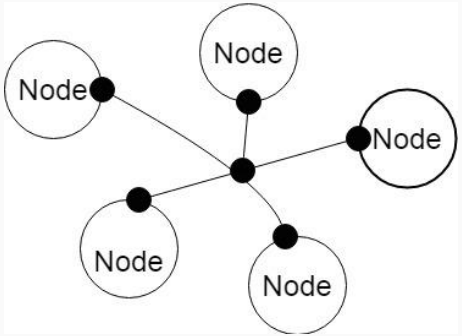
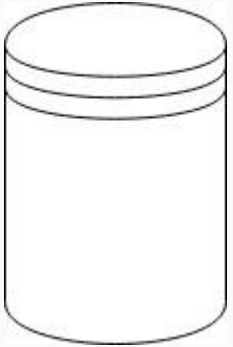


Blockchain	Master Database	Example
Product ID	Product Type	Grapes
	Product Variety	Red
Supplier ID	Supplier Name	Oranjezicht City Farm
	Supplier Long	-33.9222959
	Supplier Lat	18.3799472
	Certification	Organic
Market ID	Market Name	Oranjezicht Market
	Market Long	-33.9222959
	Market Lat	18.3799472



Solution Design: Milestones

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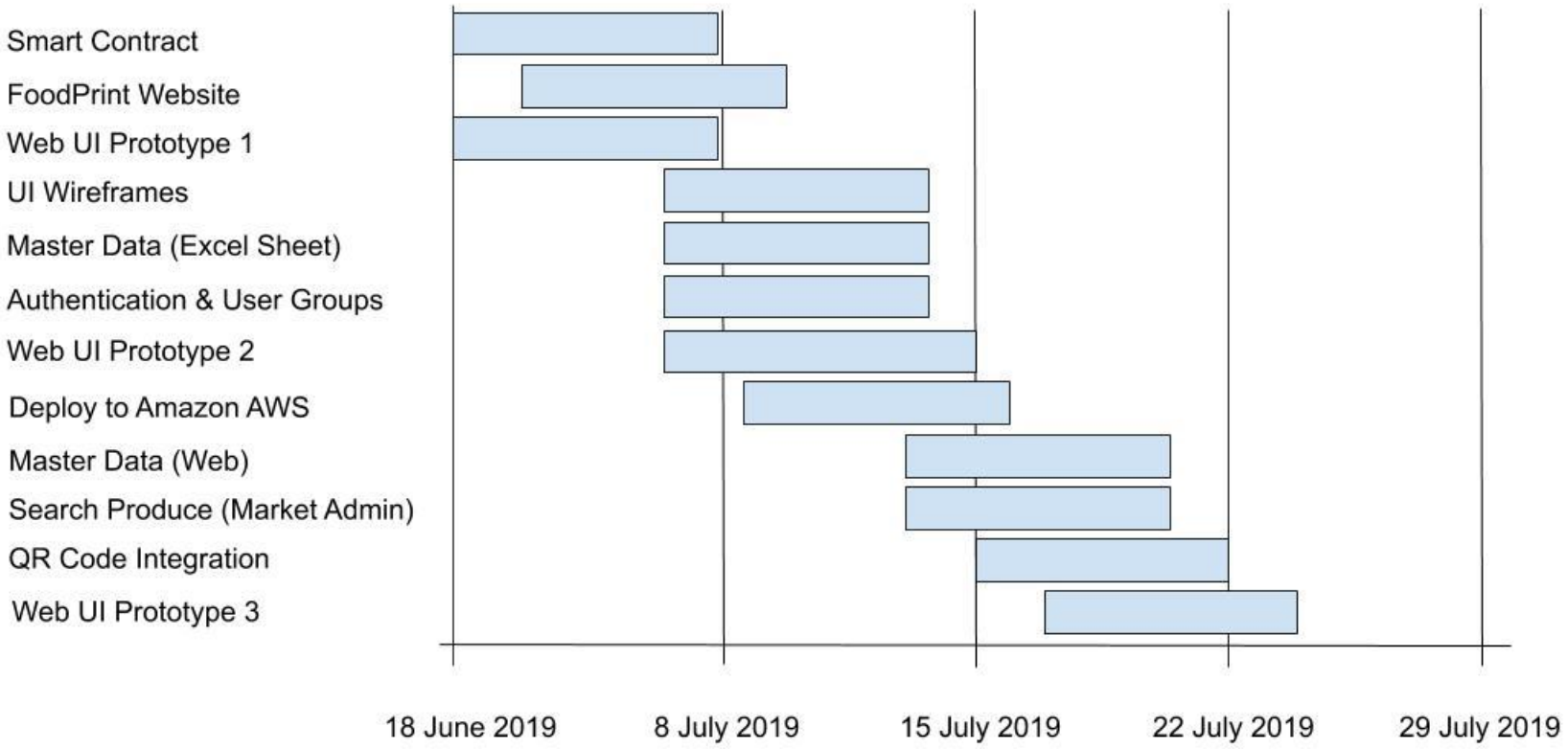

Product Features

Product Features

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System Admin

- Configure Master Data
- Perform Administrative functions

Farmer

- Capture produce data (harvest)
- View produce data

Market Admin

- Capture produce data (storage)
- Search produce data
- View produce data

Market Patron

- View produce data (Scan barcode)

Demo

The End