Bosch Truefood+
Trust & Transparency across the Value Chain
1. The business case: current situation and challenges
2. Customer needs
3. Applications of Truefood+ in the Agri supply chain
4. Our value proposition
5. Harnessing Azures services
Agriculture + Blockchain = Better Food for Consumers

$4.53$ Trillion
Aggregate retail revenue of Top 250

382
Food Recalls in USA in year 2016

~10 mn
The average direct cost of a food recall

$1.4$ Bn
Investment in Blockchain over past 3 years
Food Value Chain
Stakeholders and their needs

- **Consumer**
  - Product Freshness
  - Product provenance
  - Brand trust
  - Sustainable & ethical practices

- **Retailer**
  - Food Safety & recall
  - Provenance & differentiation
  - Product misinformation protection

- **Agri Input Manufacturer**
  - Brand counterfeit protection
  - Greater control over supply chain
  - Efficient Inventory management

- **Farmer**
  - Farmer Incentivisation
    - Sustainable Practices
    - Data Sharing
  - Agri input authenticity verification

- **Supply Chain**
  - Operational optimization
  - Condition monitoring
  - Certifications management
Our value proposition

**FOOD FRESHNESS**
Utilize the achieved end-to-end transparency across the value chain to propagate freshness & also increase shelf life.

**FOOD SAFETY**
Ensuring the safety of the products flowing across the value chain and to remove contaminated product before it reaches the consumer.

**FOOD PROVENANCE & SUSTAINABILITY**
Provide provenance to your end products by authenticating origin and sustainability certifications.

**FOOD TRACEABILITY & TARGETTED RECALL**
Securing the global supply chain through serialization and data interoperability to track the movement of food across every step enabling targeted food recall.

**FOOD WASTE REDUCTION**
Optimize supply chains & monitor environment around the products to increase shelf life and provide faster response to food recalls leading to lesser food wastage.

**INTEGRATION TO EXISTING IT SYSTEM**
The blockchain layer’s easy integration with the existing IT infrastructure in the food retail and distribution firms provides higher technical value add with lesser change management.
BLOCKCHAIN FOR FOOD SAFETY AND FRESHNESS

FOOD PROVENANCE

- Annual grocery sales are on the rise in all regions worldwide, with an emphasis on fast, fresh, prepared foods, mainly because of increased customer understanding on the source of the food, the provider’s sustainability initiative, and overall freshness.

- Truefood+’s Blockchain platform ensures product information, right from farm to logistics to being delivered at stores, does not get tampered with - by various stakeholders in the chain - and ensures top quality produce is delivered to customers.

IMPACT FOR RETAILERS

- Consumer confidence
- Increased efficiency due to detailed display of movement of goods
- Cost reduction on manual certifications management & investigations

20% of top grocers will use blockchain by 2025, Gartner
Track and trace of fresh food, dairy & meat

Truefood+’s Blockchain platform provides a view into the key details of origin, transport & production throughout the supply chain, allowing stakeholders to respond better to demands.

- Swift & easy on-boarding services for the complete value chain
- Distributed ledger based shared record of food system data
- Time stamp & condition monitoring based freshness quotient algorithms
**Food Provenance**

Provides knowledge about the source of food, its journey through the value chain and authentic certifications. Trust what you consume is always fresh.

| Freshness: | Use transparent date of harvest & geo-location on the packaging to influence buying decision |
| Brand Differentiation: | Leverage provenance and 'being local' to give the brand greater definition and differentiation |
| Certification: | Highlight the integrity of the products by providing assurance of authentic certifications |
For large retailers, the costs of removing a contaminated/defective food item can accumulate to multi-billion dollar losses.

The safe, efficient and rapid removal of contaminated products is crucial to growers, packers, processors, and distributors of food, regardless of a business's size.

Truefood+ enables retail food establishments and other retail food industry players to have in place a standardized plan that allows them to respond swiftly when a recall is issued.

- Reduce direct costs associated with Product Recall
  - Price x Quantity + Notification Costs + Transportation Costs = Direct Cost
- Compliance Penalties & lawsuits
- Lost Sales
- Insurance Impacts
- Brand Deterioration

It's estimated that 22 products are recalled or withdrawn from sale per week across Europe
**Product Recall Dashboard**

Targeted food recalls with precise root cause identification, leading to reduction in time to recall, expenditure to recall with minimal brand damage.

**Food Safety:** Safely track products in seconds (rather than weeks) to reduce cross-contamination, the spread of foodborne illness, unnecessary waste and the economic burden of recalls.

**Reduce Food Wastage:** Optimize supply chains to increase shelf life and provide faster response to food recalls leading to lesser food wastage.

**Sustainable Sourcing & Authentic Certification:** Effective monitoring of vendors quality assurance processes.
IoT enabled sensors for real-time perishable food supply chain monitoring, in order to estimate the food quality and to predict its shelf life.

Threshold breach alarms & alerts for relevant stakeholders.

The in-built track and trace mechanism then allows removal of spoiled product from the supply chain system before reaching the P.O.S.
Certificate Management

Digitization of compliance certificates and supply chain documents including country of origin

Selective sharing of digital assets with relevant stakeholders

Seamless process optimization and faster payment cycles solves the problem of inefficiencies, forgery and large account receivables

Tracks every detail of the document and keeps tab of all changes made to it in order to avoid malpractices.
Harnessing Azure services

- Integration to speed data into cloud
- Storage to scale without latency
- Visualizations to surface insights
- Analytics to predict and plan
- Security to protect data
Ready to experience the power of blockchain and transform your business in compliance with the DSCSA?

➔ We will connect you with the Bosch Truefood+ sales team: bhuvan.Shetty@de.bosch.com

➔ Learn more: bosch-india-software.com