

Theater Session

The Food Supply Chain Augmented by Blockchain – Getting More with Less Waste



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The Food Supply Chain Augmented by Blockchain – Getting More with Less Waste

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RICE KRISPIES

CHEEZ-IT

Sultana Bran



COCO POPS

Kellogg's®

Kashi

CORN FLAKES

ZUCARITAS

pop-tarts

Special K

Eggo

MorningStar Farms

FROSTED FLAKES



RICE BUBBLES

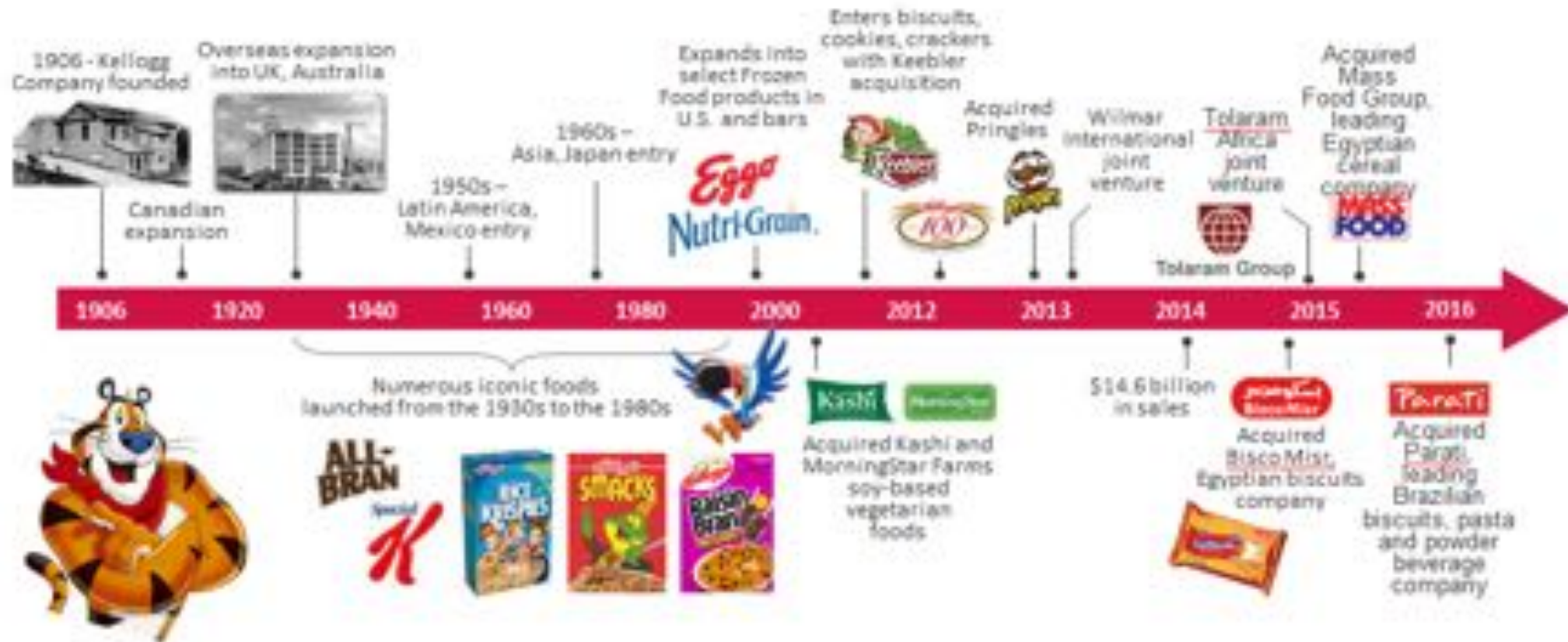
Kellogg's mini MAX

CHOCO KRISPIS

Company Overview

100+ Year Heritage, Progressive Growth

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Company Overview

Bringing Our Best to the World

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33,000 employees
in **21** countries

1,600 foods marketed
in more than **180**
countries

2016 net sales ~\$13 Billion

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Today's Reality about Food Industry

Recalls happen

Recall Summary for Calendar Year 2017		
	Number of Recalls	Number of Pounds Recalled
Total	131	20,880,574
Recalls by Class (N=131)		
Class		
I	100	18,761,576
II	22	1,084,788
III	9	1,034,210
Recalls by Reason (N=131)		
Reason For Recall		
STEC*	8	144,907
Listeria monocytogenes	15	546,276
Salmonella	1	1,076
Undeclared Allergen	53	8,761,495
Extraneous Material	24	9,043,982
Processing Defect	5	387,357
Undeclared Substance	6	1,020,654
Residue	2	3,190
Other**	17	971,547
Recall by Species/Product (N=131)		
Species		
Beef	28	909,242
Mixed	35	9,761,167
Pork	20	502,430
Poultry***	45	9,620,850
Siluriformes fish (catfish)	3	86,805

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Business motivation for “Farm to Consumer” Track and Trace

Our Corporate Responsibility

Materiality at Kellogg



Our Objective



Improve Food Quality & Safety



Reduce Food Waste



Reduce & Streamline Recalls

By Increasing

Visibility - Visibility on the supply network up to the geographical or agricultural origin of raw materials

Traceability - Ability to track and trace materials throughout the end-to-end supply chain

Transparency - Provide product & supply chain information to customers, consumers and other authorised externals

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Farm-to-Consumer Co-Innovation Proof of Concept

Participating Companies



Farm-to-Consumer Co-Innovation Proof of Concept

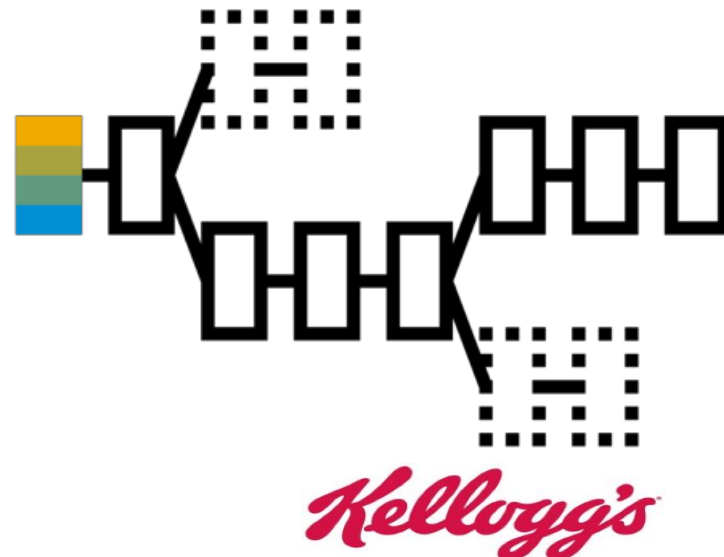
Transparency of food genealogy across the entire supply chain

Business Goals:

- Improve Food Quality & Safety
- Reduce food waste
- Reduce and streamline recalls

Technology Approach:

- Prove applicability of Blockchain through a joint proof of concept across the supply chain
- Augment SAP traceability solutions like SAP Global Track and Trace cloud network with Blockchain



Use Cases: Reduce Food Waste & Streamline Recalls

Reduce food waste:

Supplier of salad dressing has swapped an ingredient and now introduced an allergen (lactose).

Key questions: How can the dressing be used instead? Can already pre-made salad be re-labeled?

Reduce and streamline recalls:

Lettuce is infected with listeria. This is detected by reported consumer illnesses.

Key questions: What is the source? What has to be recalled, what doesn't?



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Learnings from the Proof of Concept

- **Connecting the entire supply chain improves transparency, visibility, sustainability, and efficiency**
- **Go beyond simple tracking scenarios towards multi-ingredient food production and n-tiered supply chain**
- **The Farm to-Consumer network must be open and infrastructure independent to allow everyone to have equal access**



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A Solution for the Food Industry

Blockchain will help to overcome companies' concerns by building a **decentralized, trusted business network**.

Blockchain can enable Farm-to-Consumer **next-gen business processes** with upstream and downstream provenance and genealogy.

The **Business Value** is evident:

- **Trust & Transparency:** Undeniable, immutable history of food
- **Speed:** Peer-to-peer collaboration without intermediaries
- **Food Safety:** Automated n-tier supply chain traceability
- **Sustainability & Compliance:** Provability and extra security



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Road Ahead



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Thank you

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