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BLOCKCHAIN FOR SUPPLY CHAIN AND LOGISTICS FORUM

www.blockchainsupplychain.io

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From Lineage to Safety: Chewing on Blockchain's Application to the Food Industry



Matthew DiBona
Senior Director
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XIC²

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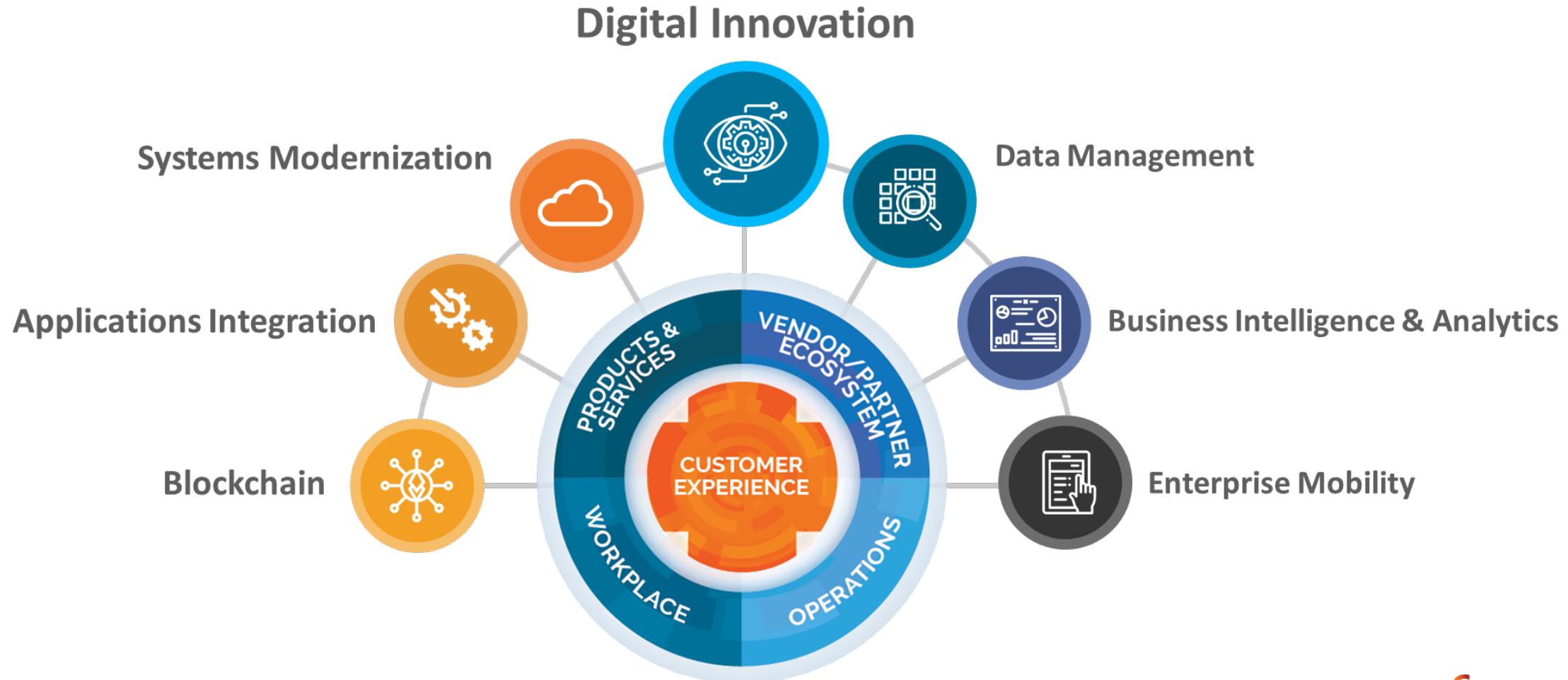
From Lineage to Safety: Chewing on Blockchain's Application to the Food Industry

Matthew DiBona
Senior Director, Smartbridge

Smartbridge

Who is Smartbridge?

We are a full-service consulting firm assisting our clients with their digital transformation



Who is Smartbridge?

Many of our key clients are in the restaurants and food distribution industry



The Ledger has Gone Digital



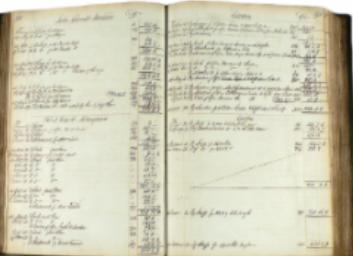
clay tablets



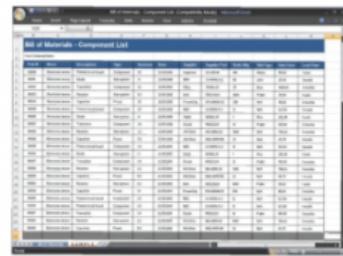
papyrus



tally sticks



double entry book keeping



Item	Description	Quantity	Unit	Cost	Total
1	Raw Material A	100	Kg	\$100	\$10,000
2	Raw Material B	200	Kg	\$200	\$40,000
3	Raw Material C	300	Kg	\$300	\$90,000
4	Raw Material D	400	Kg	\$400	\$160,000
5	Raw Material E	500	Kg	\$500	\$250,000
6	Raw Material F	600	Kg	\$600	\$360,000
7	Raw Material G	700	Kg	\$700	\$490,000
8	Raw Material H	800	Kg	\$800	\$640,000
9	Raw Material I	900	Kg	\$900	\$810,000
10	Raw Material J	1000	Kg	\$1000	\$1,000,000
11	Raw Material K	1100	Kg	\$1100	\$1,210,000
12	Raw Material L	1200	Kg	\$1200	\$1,440,000
13	Raw Material M	1300	Kg	\$1300	\$1,690,000
14	Raw Material N	1400	Kg	\$1400	\$1,960,000
15	Raw Material O	1500	Kg	\$1500	\$2,250,000
16	Raw Material P	1600	Kg	\$1600	\$2,560,000
17	Raw Material Q	1700	Kg	\$1700	\$2,890,000
18	Raw Material R	1800	Kg	\$1800	\$3,240,000
19	Raw Material S	1900	Kg	\$1900	\$3,610,000
20	Raw Material T	2000	Kg	\$2000	\$4,000,000
21	Raw Material U	2100	Kg	\$2100	\$4,410,000
22	Raw Material V	2200	Kg	\$2200	\$4,840,000
23	Raw Material W	2300	Kg	\$2300	\$5,290,000
24	Raw Material X	2400	Kg	\$2400	\$5,760,000
25	Raw Material Y	2500	Kg	\$2500	\$6,250,000
26	Raw Material Z	2600	Kg	\$2600	\$6,760,000
27	Raw Material AA	2700	Kg	\$2700	\$7,290,000
28	Raw Material BB	2800	Kg	\$2800	\$8,840,000
29	Raw Material CC	2900	Kg	\$2900	\$9,410,000
30	Raw Material DD	3000	Kg	\$3000	\$10,000,000
31	Raw Material EE	3100	Kg	\$3100	\$10,610,000
32	Raw Material FF	3200	Kg	\$3200	\$11,240,000
33	Raw Material GG	3300	Kg	\$3300	\$11,910,000
34	Raw Material HH	3400	Kg	\$3400	\$12,610,000
35	Raw Material II	3500	Kg	\$3500	\$13,340,000
36	Raw Material JJ	3600	Kg	\$3600	\$14,110,000
37	Raw Material KK	3700	Kg	\$3700	\$14,910,000
38	Raw Material LL	3800	Kg	\$3800	\$15,740,000
39	Raw Material MM	3900	Kg	\$3900	\$16,610,000
40	Raw Material NN	4000	Kg	\$4000	\$17,510,000
41	Raw Material OO	4100	Kg	\$4100	\$18,440,000
42	Raw Material PP	4200	Kg	\$4200	\$19,410,000
43	Raw Material QQ	4300	Kg	\$4300	\$20,410,000
44	Raw Material RR	4400	Kg	\$4400	\$21,440,000
45	Raw Material SS	4500	Kg	\$4500	\$22,510,000
46	Raw Material TT	4600	Kg	\$4600	\$23,610,000
47	Raw Material UU	4700	Kg	\$4700	\$24,740,000
48	Raw Material VV	4800	Kg	\$4800	\$25,910,000
49	Raw Material WW	4900	Kg	\$4900	\$27,110,000
50	Raw Material XX	5000	Kg	\$5000	\$28,340,000
51	Raw Material YY	5100	Kg	\$5100	\$30,610,000
52	Raw Material ZZ	5200	Kg	\$5200	\$33,940,000
53	Raw Material AAA	5300	Kg	\$5300	\$37,310,000
54	Raw Material BBB	5400	Kg	\$5400	\$41,710,000
55	Raw Material CCC	5500	Kg	\$5500	\$46,140,000
56	Raw Material DDD	5600	Kg	\$5600	\$50,610,000
57	Raw Material EEE	5700	Kg	\$5700	\$55,110,000
58	Raw Material FFF	5800	Kg	\$5800	\$59,640,000
59	Raw Material GGG	5900	Kg	\$5900	\$64,140,000
60	Raw Material HHH	6000	Kg	\$6000	\$68,610,000
61	Raw Material III	6100	Kg	\$6100	\$73,110,000
62	Raw Material JJJ	6200	Kg	\$6200	\$77,610,000
63	Raw Material KKK	6300	Kg	\$6300	\$82,110,000
64	Raw Material LLL	6400	Kg	\$6400	\$86,640,000
65	Raw Material MMM	6500	Kg	\$6500	\$91,140,000
66	Raw Material NNN	6600	Kg	\$6600	\$95,610,000
67	Raw Material OOO	6700	Kg	\$6700	\$100,110,000
68	Raw Material PPP	6800	Kg	\$6800	\$104,610,000
69	Raw Material QQQ	6900	Kg	\$6900	\$109,110,000
70	Raw Material RRR	7000	Kg	\$7000	\$113,640,000
71	Raw Material SSS	7100	Kg	\$7100	\$118,140,000
72	Raw Material TTT	7200	Kg	\$7200	\$122,610,000
73	Raw Material UUU	7300	Kg	\$7300	\$127,110,000
74	Raw Material VVV	7400	Kg	\$7400	\$131,640,000
75	Raw Material WWW	7500	Kg	\$7500	\$136,110,000
76	Raw Material XXX	7600	Kg	\$7600	\$140,610,000
77	Raw Material YYY	7700	Kg	\$7700	\$145,110,000
78	Raw Material ZZZ	7800	Kg	\$7800	\$150,640,000
79	Raw Material AAAA	7900	Kg	\$7900	\$155,110,000
80	Raw Material BBBB	8000	Kg	\$8000	\$160,640,000
81	Raw Material CCCC	8100	Kg	\$8100	\$165,140,000
82	Raw Material DDDD	8200	Kg	\$8200	\$170,610,000
83	Raw Material EEEE	8300	Kg	\$8300	\$175,110,000
84	Raw Material FFFF	8400	Kg	\$8400	\$180,640,000
85	Raw Material GGGG	8500	Kg	\$8500	\$185,140,000
86	Raw Material HHHH	8600	Kg	\$8600	\$190,610,000
87	Raw Material IIII	8700	Kg	\$8700	\$195,110,000
88	Raw Material JJJJ	8800	Kg	\$8800	\$200,610,000
89	Raw Material KKKK	8900	Kg	\$8900	\$205,110,000
90	Raw Material LLLL	9000	Kg	\$9000	\$210,640,000
91	Raw Material MLLL	9100	Kg	\$9100	\$215,140,000
92	Raw Material NLLL	9200	Kg	\$9200	\$220,610,000
93	Raw Material OLLL	9300	Kg	\$9300	\$225,110,000
94	Raw Material PPPP	9400	Kg	\$9400	\$230,640,000
95	Raw Material QQQQ	9500	Kg	\$9500	\$235,110,000
96	Raw Material RRRR	9600	Kg	\$9600	\$240,610,000
97	Raw Material SSSS	9700	Kg	\$9700	\$245,140,000
98	Raw Material TTTT	9800	Kg	\$9800	\$250,610,000
99	Raw Material UUUU	9900	Kg	\$9900	\$255,110,000
100	Raw Material VVVV	10000	Kg	\$10000	\$260,640,000

Source: www.coindesk.com

OPERATIONS

CDC WARNS RESTAURANTS TO AVOID LETTUCE FROM YUMA, ARIZ., OVER E. COLI CONCERNS

The watchdog has traced an outbreak of E. coli cases to chopped romaine lettuce grown in that area.

By Peter Romeo on Apr. 13, 2018



BRIEF
Maker of Bertolli olive oil settles class-action lawsuit for \$7M

By Cathy Slegner • April 12, 2018

Dive Brief:

- Deoleo USA, the manufacturer of Bertolli olive oil, settled a class-action lawsuit last week by agreeing to pay \$7 million and change its packaging and testing protocols, according to the settlement agreement.
- The complaint, filed in 2014, alleged that the company misrepresented its products by labeling them as "Imported from Italy." The seven plaintiffs also questioned whether the olive oil could be extra-virgin quality after

Food Safety News

Breaking news for everyone's consumption

22 illnesses prompts largest shell egg recall since 2010

BY NEWS DESK | APRIL 14, 2018

Rose Acre Farms of Seymour, IN late Friday recalled 206,749,248 eggs because they have the potential to be contaminated with *Salmonella Braenderup*, an organism which can cause serious and sometimes fatal infections in young children, frail or elderly people, and others with weakened immune systems.



Chicken sold at Sam's Club stores recalled because of contamination fears

Breaking News Staff

7:36 p.m. Monday, April 16, 2018 Filed in [Homepage](#)

DAYTON — Approximately 100,000 pounds of chicken products sold in Sam's Club stores nationwide are being recalled because of contamination.

The Dark Side of the Truffle Trade

Nighttime heists, Chinese knockoffs, and poisoned meatball-sabotage: Inside the high-stakes pursuit of the world's most-prized fungus.

RYAN JACOBS | JAN 15, 2014 | **GLOBAL**



A white truffle harvested near Alba, Italy's white truffle capital (Reuters/Stefano Rellandini)

Police seize 20,000 contraband avocados at Panama border

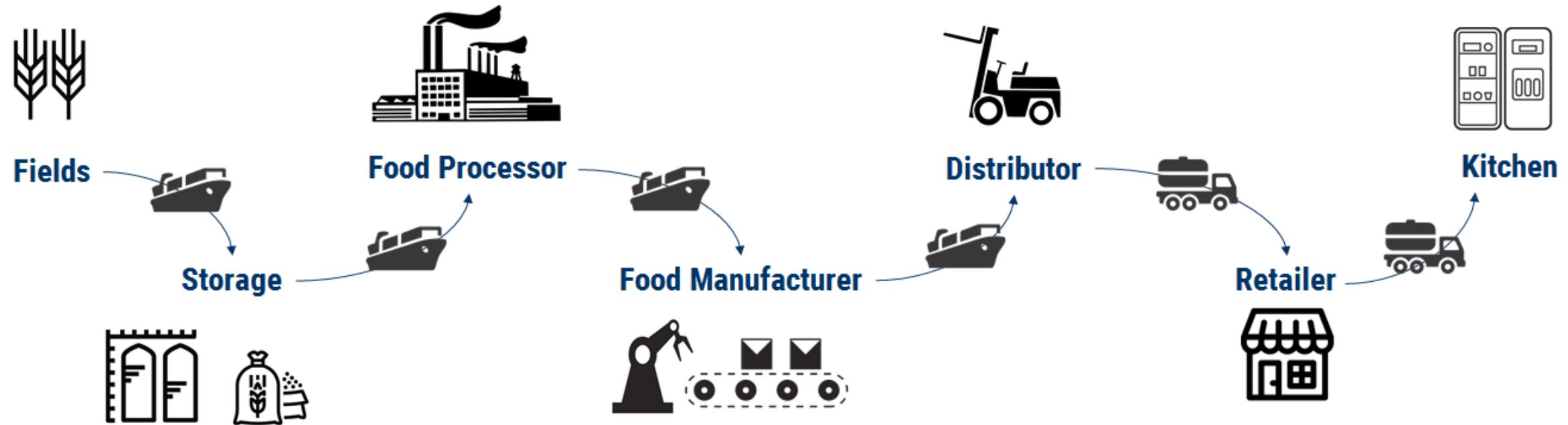
Zach Dyer
May 13, 2016



Border Police near Golfito, Puntarenas seize an illegal shipment of avocados on May 12, 2016. ((Courtesy Public Security Ministry))

Border police seized 20,000 apparently illegal avocados at the Panama border on Thursday afternoon, the latest in the ongoing avocado saga that began when Costa Rica banned Mexican imports a year ago.

The Food Industry Value Chain



Food Industry Challenges

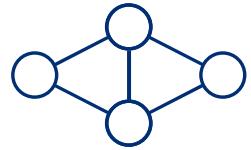


Foodborne illness is a major problem

Customers demand quality and transparency

Records of food's journey are poorly managed

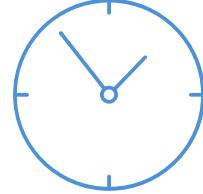
Key Characteristics of Blockchain



Distributed



Transparent



Chronological



Encrypted



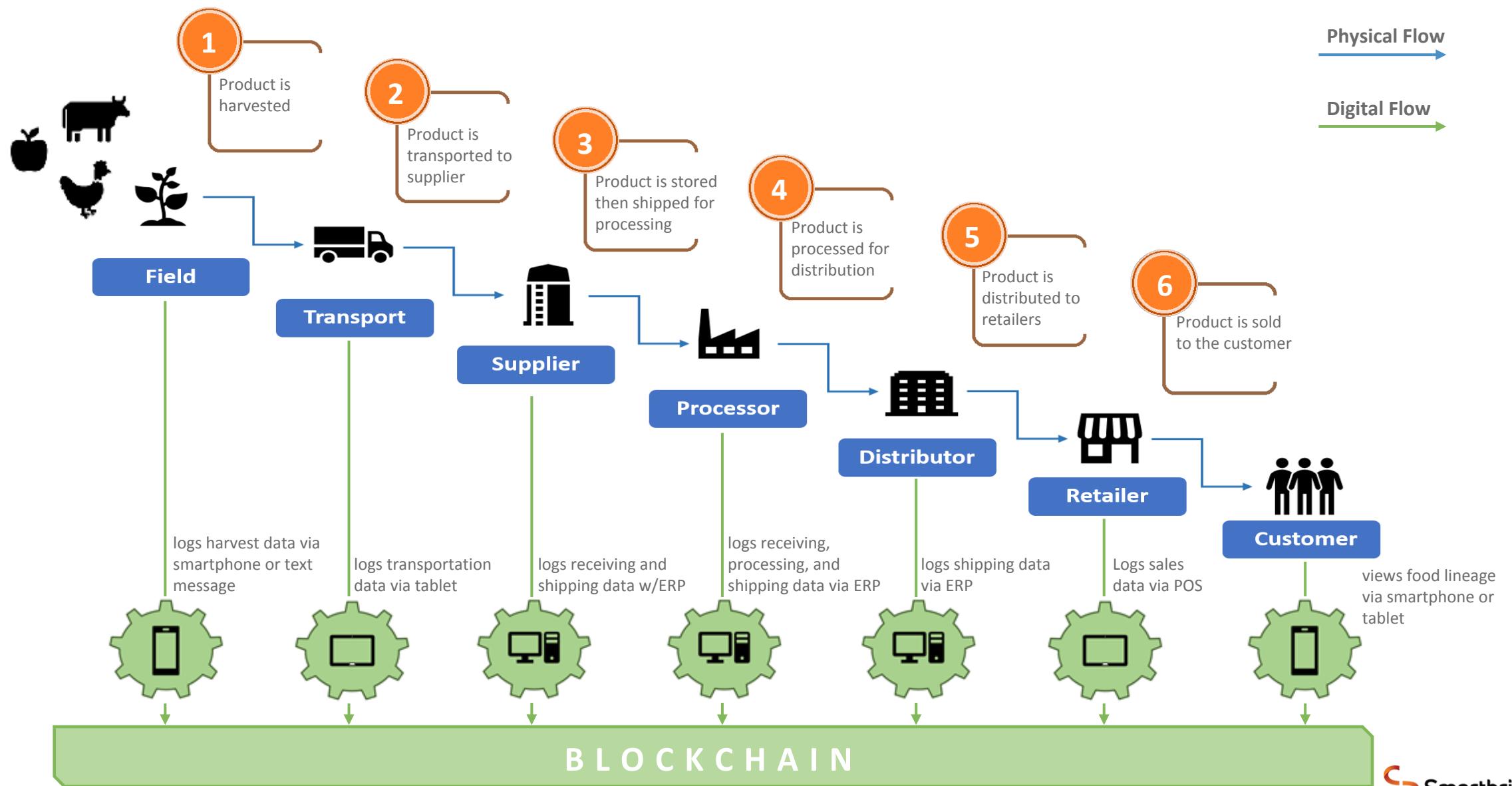
Immutable

These characteristics of blockchain enable an audit trail, efficiency, and trust

Benefits of Blockchain to the Food Industry

- 1 Participants can better monetize production
- 2 Recalls can be targeted quickly instead of blanketed
- 3 Automation of custody changes saves time/cost
- 4 Collaboration is more open and transparent
- 5 Customers can trust authenticity of food supply

The Food Industry Value Chain – Physical and Digital Flows



For simplicity, other potential participants have been excluded, such as standards organizations, certifying agents/auditors, and other transportation providers.

Demonstration

Obstacles Facing Blockchain Adoption in the Food Industry



Blockchain Maturity

Physical-Digital Linkage

Incentivizing Data Sharing

Legal Strength of Smart Contracts

Recommendation: Begin Preparing Today

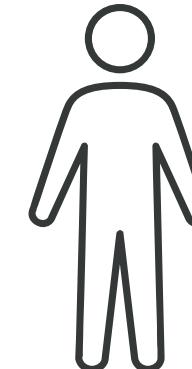
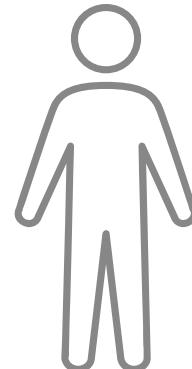
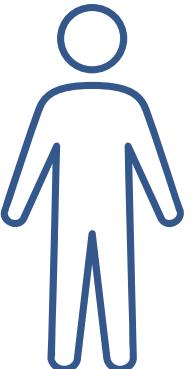
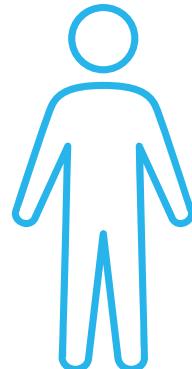
Spread the word

Modernize your system architecture

Identify your potential blockchain ecosystem

Start with an internal pilot

Look for friction in your business



Questions?

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