

decade of DISRUPTION

decade of

A Tumultuous 10 Years

So much has happened since 2010—the Great Recession ended, Elon Musk shot a Tesla Roadster into space, and Marvel released 21 superhero movies.

But what has defined this past decade for dairy? The markets saw significant price volatility, butter saw a resurgence in popularity, and we saw a world awash in milk after EU quota sunset. And those are just a few of the major events that rocked markets and put the entire industry on tilt. How can we succinctly sum up a tumultuous ten years in the dairy industry? Maybe we can borrow from David Letterman.

Letterman took his final bow on The Late Show in 2015. His iconic top 10 lists went with him, which covered everything from Top Ten Rejected James Bond Gadgets to Top 10 Things That Sound Cool When Said By Snoop Dog.

As a way to bid goodbye to the 2010s, Blimling and Associates is reviving the iconic top 10 list, but with dairy flavor. So, Paul, give us a drumroll as we share our Top 10 Disruptions for the Decade.

**“IT’S THE END OF A DECADE. IN ANOTHER TEN YEARS TIME, WHO CAN
SAY WHAT WE’LL FIND? WHAT LIES WAITING DOWN THE LINE?”
-ABBA “Happy New Year”**



EU LIFTS QUOTAS

INTERVENTION:

In an effort to stabilize the market, the European Commission purchases surplus SMP and butter stocks. This program began in July 2015.

SMP/NDM INTERVENTION STOCKS: (METRIC TONS)

JULY 2015: **702**

DEC 2017: **378,577**

AUG 2019: **0**

1970s - 1980s

EU milk production rose faster than domestic demand, causing farmers to dump product into government stores.

1984 The EU puts milk quotas in place, enforcing fines for those who produce above the limit.

2015 The EU abolishes the milk quota system in March following a slow repeal starting in 2010.

TOTAL MILK OUTPUT

(METRIC TONS)
*2019 Estimates



EU-27

2010: 135,322
2015: 151,206
2019: 158,475



GERMANY

2010: 28,659
2015: 31,291
2019: 32,375



FRANCE

2010: 23,375
2015: 25,375
2019: 24,475

UNITED KINGDOM

2010: 13,584
2015: 15,191
2019: 15,500



IRELAND

2010: 5,372
2015: 6,585
2019: 8,295



NETHERLANDS

2010: 11,626
2015: 13,331
2019: 13,715





FLUID MILK SUFFERS



CONVENTIONAL FLUID MILK SALES:

↓ 19%

FROM 2009 TO 2019

ANNUAL SALES IN FIVE YEARS:

(IF THE CURRENT TREND CONTINUES)

**↓ 4 BILLION
POUNDS**

FLUID MILK SALES (BILLION POUNDS)



2010



2019*



NON-DAIRY MILK SALES:

**+\$1.9
BILLION**

FROM 2018 TO 2019

**↑ 6% YEAR
OVER
YEAR**

45 MILLION HOUSEHOLDS
IN THE US PURCHASE
PLANT-BASED MILK

CEREAL SALES:

↓ 25%

SINCE
2009



SOURCES: USDA, AC Nielsen, The Good Food Institute. *2019 estimate Conventional



CHINA'S RISING MIDDLE CLASS

1999 The middle class makes up 2% of the population, about 29 million people.

2013 China's middle class is one of the fastest growing in the world, now at 531 million people, 39% of the population.

2018 A growing middle class drives fluid dairy consumption to 79 pounds per person per year, up from 39 pounds in 2007.

ANNUAL MILK POWDER IMPORTS (METRIC TONS)

↓ LOWEST TOTAL THIS DECADE
413,294 in 2010

↑ HIGHEST TOTAL THIS DECADE
960,000 in 2019*

→ 2019*
960,000

ANNUAL TOTAL MILK PRODUCTION (METRIC TONS)

↓ LOWEST TOTAL THIS DECADE
30,010,000 in 2013

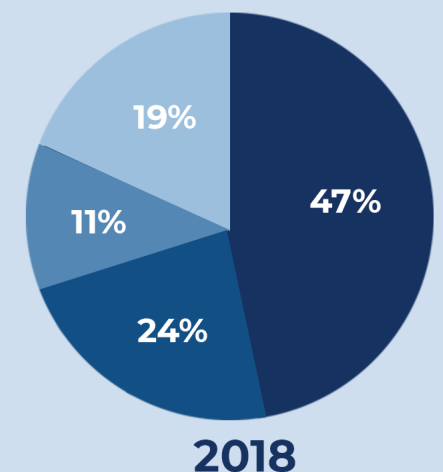
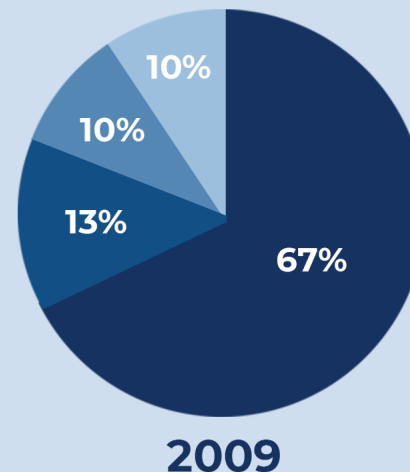
↑ HIGHEST TOTAL THIS DECADE
31,800,000 in 2015

→ 2019*
31,500,000



CHINA DAIRY HERD SIZES

■ <100 head ■ 100-499 ■ 500-999 ■ >1,000 head



SOURCES: USDA, China Ministry of Agriculture, Statista, GTA. *2019 Estimates



WHEY PROTEIN BOOM

FIVE YEAR SURGE IN GLOBAL PLANT CAPACITY

2012					
2013					
2014					
					
2015					
2016					

1960s-1970s

Whey is viewed as a waste product, spread on fields and fed to livestock.

1980s-2000

New studies emerge, highlighting the benefits of adding whey to diets.

2000-today

Whey protein is now mainstream for the general fitness sector and the average health-conscious consumer.

WHEY PROTEIN CONCENTRATE 80% +

PRODUCTION (pounds):

2010	2019*
245,000,000	420,000,000

EXPORTS (pounds):

2010	2019*
37,000,000	100,000,000

SOURCES: USDA. *2019 estimate



THE RISE OF E-COMMERCE

E-COMMERCE SALES
2010: **\$169** | 2019: **\$522**
BILLION | **BILLION**

AMAZON PRIME

2005 Amazon officially releases Prime, a new membership service offering its subscribers free two-day shipping for a \$79 annual fee.

2015 Amazon Prime Day debuts on July 15, featuring deals similar to Black Friday for Prime members.

GROWING MEMBERSHIP

2010: **4** MILLION MEMBERS

2019: **105** MILLION MEMBERS

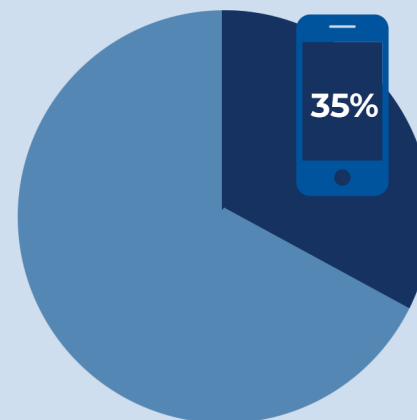
amazon.

TRIPS TO THE GROCERY
STORE (per week)

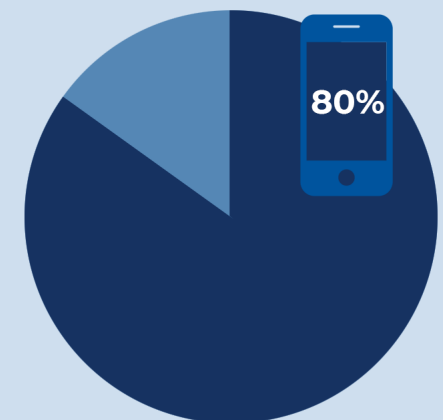
2009: **2.0** 2019: **1.6**



PERCENTAGE OF AMERICANS WITH SMARTPHONES



2010



2019

2017 Amazon purchases Whole Foods Market for \$13.7 billion.

SOURCES: Consumer Intelligence Research Partners, FRED, US Census Bureau, Food Marketing Institute.



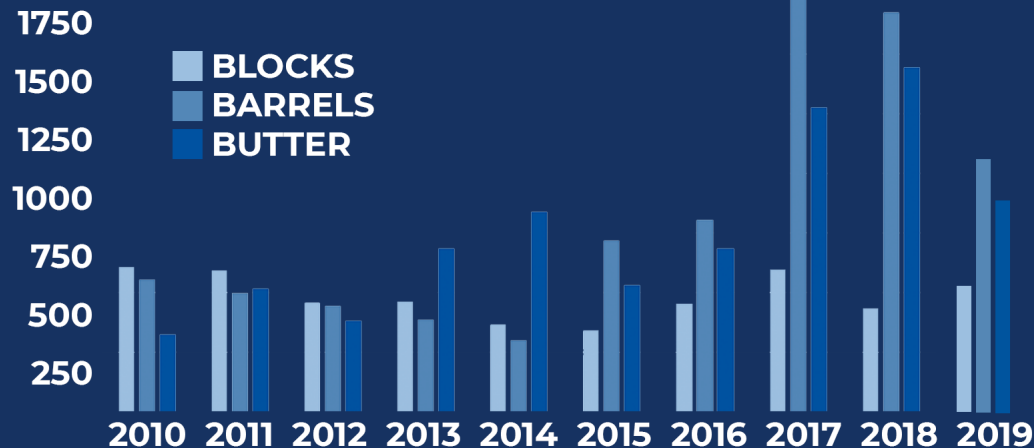
CME SPOT GOES ELECTRONIC

CME ANNUAL TRADING VOLUME 2010

BLOCKS: 608
BARRELS: 553
BUTTER: 322

CME ANNUAL TRADING VOLUME 2019

BLOCKS: 585
BARRELS: 1,185
BUTTER: 930



1870s Trading pits introduced at the Milwaukee Grain Exchange.

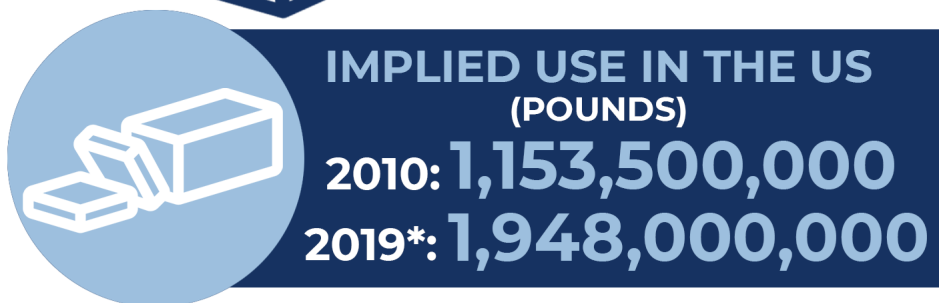
1918 The Wisconsin Cheese Exchange (WCE) opens in Plymouth, WI.

1974 WCE moves to Green Bay, WI, becomes the National Cheese Exchange (NCE).

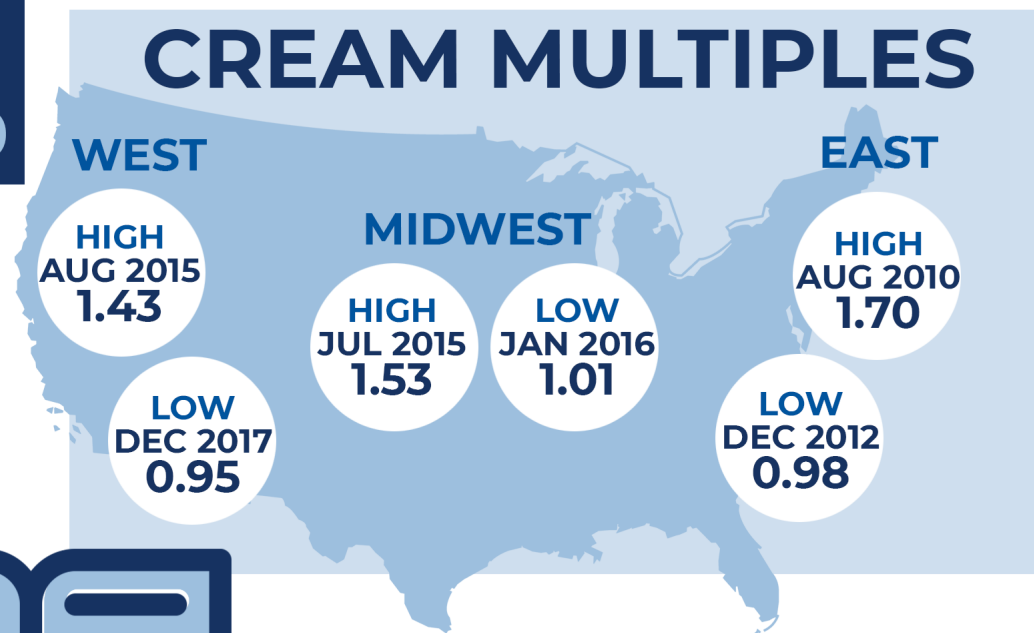
1997 Spot cheese market trading moves to the CME.

2017 Spot cheese trading goes electronic.





SOURCES: USDA, CME. *2019 Estimates



EAT BUTTER.

TIME magazine featured butter on the cover of its June 23, 2014 edition - claiming the war on fat was ending.



OUT OF RECESSION



CONSUMER CONFIDENCE

(University of Michigan Consumer Sentiment Index)

↓ LOWEST POINT IN PAST DECADE
55.8 in August 2011

↑ HIGHEST POINT IN PAST DECADE
101.4 in March 2018

→ CURRENT LEVEL
99.2 in December 2019

GLOBAL GDP (SAAR)

2010	2019*
+4.3%	+3.0%



US GDP (SAAR)

2010	2019*
+2.6%	+2.2%



UNEMPLOYMENT RATE

2010	2019
9.6%	3.5%



SOURCES: University of Michigan, IMF, Federal Reserve, National Restaurant Association, BLS.
*2019 Estimates

INFLATION

FOOD AWAY FROM HOME (YEAR-OVER-YEAR)



2010: +1.3%	2019: +3.2%
HIGHEST POINT: OCT 2019 +3.3%	LOWEST POINT: APR 2010 +1.1%

FOOD AT HOME (YEAR-OVER-YEAR)



2010: +0.3%	2019: +1.0%
HIGHEST POINT: SEP 2011 +6.3%	LOWEST POINT: OCT 2016 -2.3%



RESTAURANT PERFORMANCE INDEX



2010: 99.9	HIGHEST POINT: DEC 2017	LOWEST POINT: JAN 2010
2019: 101.1	102.9	98.3



CONSOLIDATION CONTINUES



ALL MILK PRICES

THROUGHOUT THE PAST DECADE



LOWEST

\$14.50 in May 2016



HIGHEST

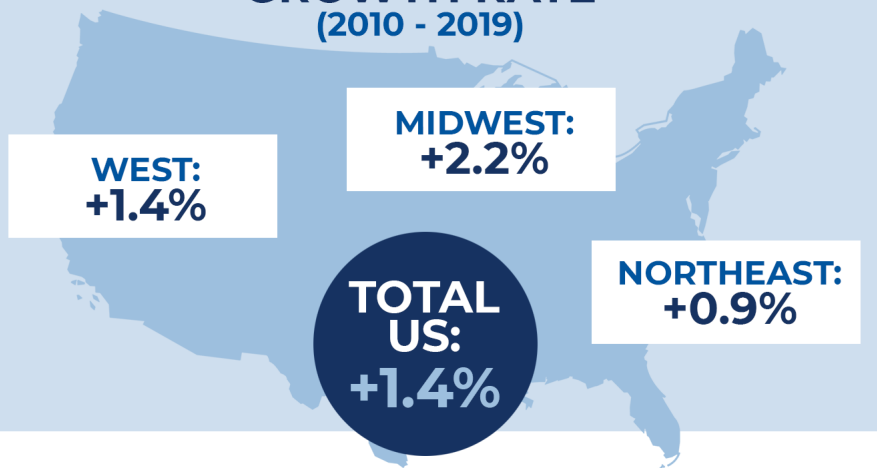
\$25.70 in September 2014



2019 AVERAGE

\$18.53

MILK PRODUCTION COMPOUND ANNUAL GROWTH RATE (2010 - 2019)



COW NUMBERS

2010: 9,123,000 2019: 9,331,000

OPERATIONS

2010: 53,132 2018: 37,468

MILK PER COW (pounds)

2010: 21,142 2019: 23,395

AVERAGE HERD SIZE

2010: 172 2018: 251



COW NUMBERS

2010: 1,288,000 2019: 1,236,000

OPERATIONS

2010: 13,740 2018: 11,120

MILK PER COW (pounds)

2010: 19,730 2019: 22,185

AVERAGE HERD SIZE

2010: 107 2018: 135



COW NUMBERS

2010: 799,00 2019: 855,000

OPERATIONS

2010: 7,140 2018: 4,685

MILK PER COW (pounds)

2010: 20,939 2019: 23,665

AVERAGE HERD SIZE

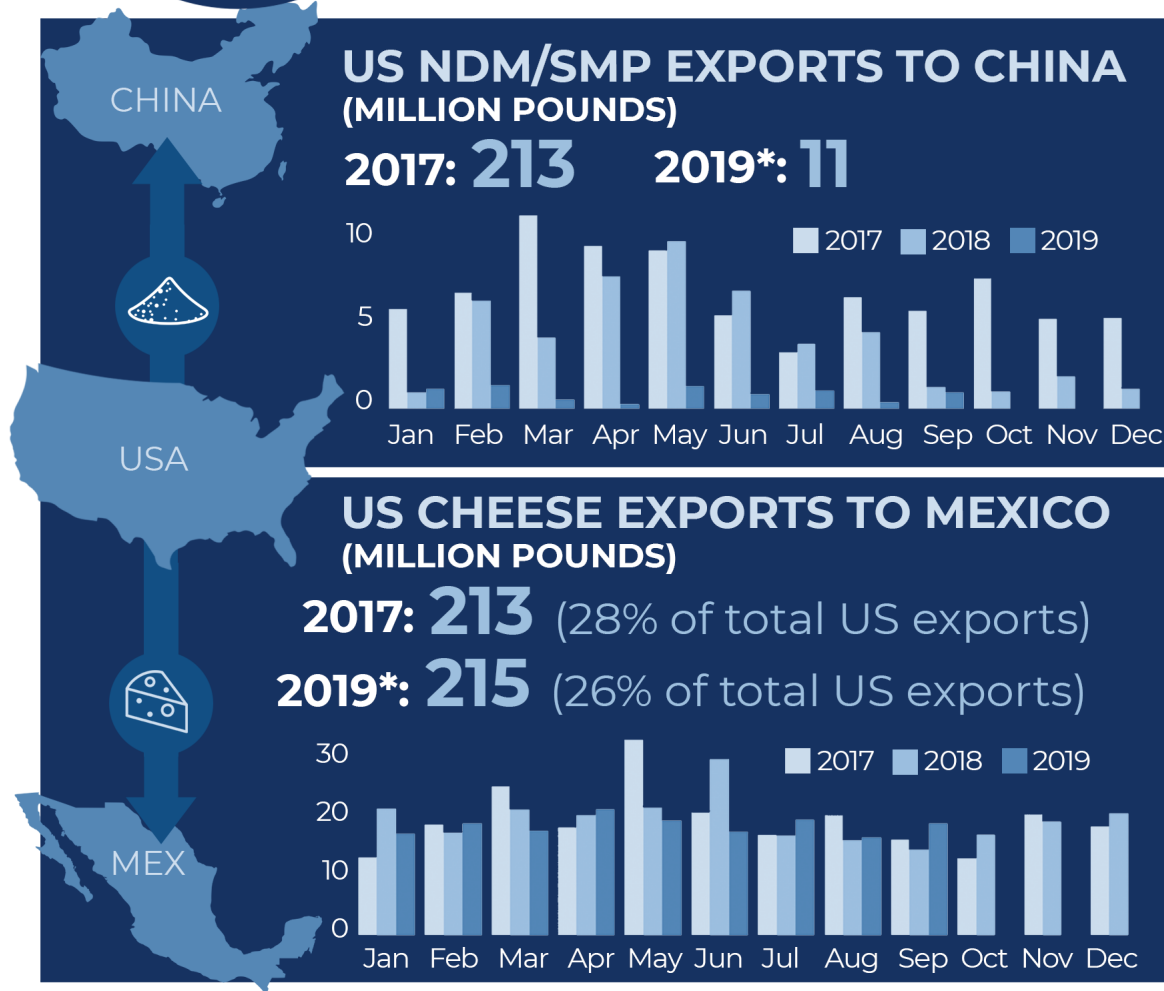
2010: 115 2018: 196



SOURCES: USDA. *2019 Estimates



TRADE WARS



Russia cuts off EU dairy imports in July 2014 following European sanctions.

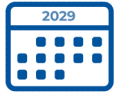
EU CHEESE EXPORTS TO THE WORLD (METRIC TONS)

2013: **786,309** 2019: **880,000**
2014: **721,354**



SOURCES: USDA, GTA. *2019 Estimates

The Next 10 Years



Disruption is not going to stop when the clock strikes midnight on December 31.

We expect more upheaval in the 2020s. We'll see more consolidation. We'll see mind-blowing technological advances. We'll see new forces keeping market participants on their toes even as consumers get lazier. Here are five bold predictions for the coming decade.



Lab Grown Dairy Products Will Steal Market Share: Aggressive investment in research and development will make these products quickly commercially viable. And, they will greet an audience willing to branch out beyond plant-based alternatives. The largest player in the space, Perfect Day, has already raised \$200 million from agricultural heavy-hitters like Tyson and ADM. The next hurdle? Price. If marketers can hit the right price-point, end-users could turn to the lab-grown dairy alternatives—achieving suitable functionality without the inconvenience of sourcing a perishable product with volatile pricing and a large environmental footprint.



Climate Change Becomes a Major Disruptor: Global agricultural markets will increasingly confront climate change – forcing alterations in how and where crops/ livestock are grown. Europe is on the leading edge of engagement and rulemaking. Northwestern Europe – where much of the continent's milk is produced – could be at a greater risk for severe weather events in the years ahead, impacting forage production and increasing the probability of heat stress in dairy cows. In the decade ahead, we will see more intense efforts in Europe and elsewhere to combat climate change by reducing cow numbers while also improving animal efficiency. Already we're seeing phosphorus and nitrogen levels cutting into herd sizes in the Netherlands. These actions could ultimately slow output expansion in the years ahead.

The Next 10 Years



Federal Order System Will Come Under Increased Scrutiny: The US market has clearly outgrown the current pricing mechanism. With the fluid market continuing to shrink, manufacturers facing increased costs, and quickening consolidation across the supply chain, we will see market participants push to upgrade. Dairy farmers could lead the charge, as large producers with growing market power seek a less rigid structure, incentives for innovation and potentially more stable marketplace.



Self-Sufficient China: China has been playing the long game...restructuring its dairy sector and building up domestic manufacturing infrastructure over the past decade. This puts China on strong footing to reduce reliance on imported goods like milk powder. That will increase competition for global dairy exports in the years ahead. And while the EU and New Zealand continue to forge bilateral or multilateral agreements, the new decade will begin with the US still involved in some major skirmishes, likely putting US exporters at a disadvantage.



E-Commerce Takes Things to Another Level: Consumers are getting lazier with every passing year and the next decade will be no different. Continuous improvement in the virtual assistant space and tie ins with e-commerce will keep consumers out of grocery stores. But that's not a new trend. The next decade will continue to ease human interaction out of the mix. Today it takes bodies to pick pasta off a grocer's shelf and a delivery guy to ring your doorbell. In the next ten years we will see robots pre-sorting grocery orders before they make it out of the warehouse. Smart refrigerators and pantries could restock items automatically, potentially limiting the sale of impulse purchase items – like chip dip and specialty cheese – in the decade ahead. One additional dimension: expect governments in the US and elsewhere in the world to increase scrutiny of Amazon.com, with agitation for somehow breaking up the e-commerce behemoth.

a better way of doing business.

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