

K-STATE RANCHING SUMMIT

***Beef 2030—Pursuing technology,
transparency and profitability***

**August 15, 2018
KSU Alumni Center Ballroom
Manhattan, KS**



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Beef 2030—Pursuing technology, transparency and profitability

Agenda

8:30 AM	Registration
9:00 AM	Welcome, Goals
9:15 AM	Pursuing, adopting and leveraging technology Mr. Mark Gardiner, Gardiner Angus, Ashland, KS
10:00 AM	Managerial accounting: key numbers for ranch managers Mr. Tyson Johnson, Sooner Cattle Co., Pawhuska, OK
10:45 AM	Break Lunch (30 min)
11:15 AM	What can we learn from consumer trends Mr. Don Close, Rabo AgriFinance, St. Louis, MO
12:00 PM	Response to morning session followed by Q & A Mr. Matt Perrier, Dalebanks Angus, Eureka, KS
12:15 PM	Lunch
1:00 PM	Disruptive technologies and the Beef Industry Dr. Tom Field, University of Nebraska, Lincoln, NE
1:45 PM	A look at specific disruptive technologies <i>Genome editing and the CRISPR revolution</i> Dr. Megan Rolf, Kansas State University <i>Data analytics in the dairy business-DRINK-Dairy Records Intelligence Network</i> Dr. Luis Mendonca, Kansas State University <i>UAVs bring precision ag to the beef business</i> Dr. Ray Asebedo, Topcon-Digistar
2:30 PM	Break
3:00 PM	A vision of the Beef Industry in 2030 Mr. John Butler, Beef Marketing Group, Manhattan, KS
3:45 PM	Response to afternoon session followed by Q & A Dr. Dale Blasi, Kansas State University, Manhattan, KS
4:00 PM	Adjourn

Platinum Sponsor: **Fourth & Pomeroy Associates, Inc. Clay Center, KS**



See www.KSUBEEF.org for online registration and additional details

Sponsors:

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Speaker Biographies:

Mr. Mark Gardiner, Gardiner Angus, Ashland, Kansas



Mark Gardiner is the president of Gardiner Angus Ranch, Inc. This family-owned, generational beef operation is located in Ashland, Kansas, near the Oklahoma Panhandle. Gardiner graduated with a B.S. in animal sciences and industry from Kansas State University in 1983.

In early 2000, Mark assumed management of the day to day ranch operations from his father, Henry Gardiner. Mark often remarks, "Dad created the playbook. We just have to be disciplined enough to continue to execute the playbook he left us." Under Mark's direction, the ranch has grown an embryo transfer program that makes over 3,500 transfers a year, making it one of the largest AI/ET beef operations in the world. By 2012, through land acquisition, Gardiner Angus Ranch doubled in size. In the last decade, Mark has overseen the modernization of the ranch's infrastructure, enabling many cost effective and more efficient business practices. Bulls are now developed on the ranch and home raised and customer purchased cattle destined for commercial feed yards and retained ownership through U.S. Premium Beef are backgrounded at home on grass, wheat, or the Ranch Yard.

Gardiner is a founding board member and stockholder of U.S. Premium Beef; a fully integrated producer owned beef packing company. USPB has processed over 15 million head to date and returned over 600 million dollars in premiums to the beef producers that marketed these cattle. Gardiner still serves on the USPB board, currently serving as the Chairman. Mark is a former board member of the American Angus Association, former chairman of the NCBA Seedstock Council and former President of the Kansas Angus Association. Additionally, Gardiner is active in the Beef Improvement Federation.

Mark is continuing the Gardiner family legacy of community involvement, both at home and nationally. In 2012, under Mark's guidance, the Henry C. Gardiner Scholarship and Lecture Series was created and endowed at Kansas State University. To date, twenty-two undergraduate students have received \$100,000 in scholarships.

The Henry C. Gardiner Global Food Systems Lectures have hosted thought leaders to discuss such important issues as global food insecurity, depletion of water resources, sustainability and the social and environmental impact of food production. Mark is an active member of the selection committee at K-State charged with identifying world class intellectuals to present thought provoking and necessary

conversations relative to sustainable agriculture. All lectures are free and the public is encouraged to attend.

Mark is active in the Ashland community, serving on the Ashland school board for many years. He and his family are active in the Ashland United Methodist Church. He is married to the former Eva Stumpff, DVM MS. Together they have twenty-five-year-old twin boys, Cole and Ransom, who joined GAR full time in 2016, they represent the 5th generation of the Gardiner family ranching in Clark County KS, and nineteen-year-old son, Quannah, who is a sophomore at Kansas University.

Mr. Tyson Johnson, Sooner Cattle Co., Pawhuska, Oklahoma



Tyson Johnson resides in Pawhuska Ok and is the General Manager of Sooner Cattle Company. The ranch is a large reputable stocker and cow/calf operation in Osage county.

Tyson learned many valuable life lessons growing up ranching on the Utah/Arizona border where business was the topic of discussion at the dinner table. This atmosphere fostered a love for both agriculture and business. After receiving a Bachelor of Science degree in Agribusiness from Arizona State University and working on several different types of operations he eventually went out on his own leasing 200,000 acres in the northern Arizona. After many successful years he sold out and went back to graduate school attending the King Ranch Institute for Ranch Management. Upon graduation he joined Deseret Ranches as part of the management team for Deseret Cattle and Citrus in St. Cloud, Florida. After a short time in Florida he moved to Paducah Texas to manage the companies Triangle Ranch and eventually ending up at Sooner Cattle Company. During his time with Deseret Ranches he has been a part of many progressive changes, ranging from assisting with the development of an intensive early weaning program to implementing a high density low frequency grazing system. He has also spearheaded and assisted in several large acquisitions for the company. Tyson enjoys the challenges that ranching brings. Trying to balance science with business, while leading employees in personal and professional development, creates the "art of management" that excites and motivates him.

Tyson along with his wife Wenda and two beautiful little girls Tayla and Jenica enjoy the ranching way of life, recognizing the blessings it brings into their lives.

Mr. Don Close, Rabo AgriFinance, St. Louis, Missouri



Don Close is an animal protein analyst at Rabo AgriFinance in the RaboResearch Food & Agribusiness group.

Close is responsible for analyzing all animal protein sectors, but specializes in beef. Prior to joining Rabo AgriFinance, Close served as market director for the Texas Cattle Feeders Association

in Amarillo, Texas, representing cattle feeders in Texas, Oklahoma and New Mexico. He previously held roles with AzTX Cattle Co. in Hereford, Texas; Future Beef Operations in Parker, Colorado; and PHI Marketing Services at Pioneer Hi-Bred International Inc. in Des Moines, Iowa.

Close has conducted research on a wide-range of topics including confinement cow/calf operations, LFTB, ground beef and development in international trade. He is also a regular speaker for state, national and international livestock groups across North America, Australia and New Zealand. Currently, Close authors bi-monthly columns for the National Cattlemen's publication, and is working on market issues at the intersection of marketing and ag policy.

Close is a graduate of West Texas A & M. He has a bachelor's agricultural economics.

Mr. Matt Perrier, Dalebanks Angus, Eureka, Kansas



Matt Perrier grew up on his family's ranch, Dalebanks Angus, and graduated from Kansas State University in 1996. After graduation, he worked as Director of Retail and Foodservice Promotions with the Pennsylvania Beef Council. He then worked for the American Angus Association (AAA), where he was a Regional Manager in TX

& NM, and later Director of Commercial Programs for the AAA. He and his wife, Amy, moved back to Eureka to work at Dalebanks in early 2004.

Dalebanks Angus was begun in 1904 by Matt's great grandfather, whose family settled northwest of Eureka, KS, in 1867. The ranch lies in the southern Flint Hills, one of the last vestiges of native tallgrass prairie in America. For over 110 years, they have raised and marketed Angus bulls to commercial and registered producers nationwide. Roughly 200 bulls are sold annually through their fall auction and spring private treaty sales. Registered females are sold privately throughout the year. In addition to Angus cattle,

the Perriers raise wheat, corn, soybeans, alfalfa and various cover crops for grazing.

Matt is a past president of the Kansas Livestock Association and has served on various local, state and national boards in the livestock industry. In addition, Matt & Amy serve on several community and church organizations.

Even more important than raising cattle, they raise kids. Ava (15), Lyle (12), Hannah (10) and Henry (7) are all hard-working ranch children who are also very active in school and 4-H. Amy is a registered Physical Therapist and works part-time at a clinic in Eureka.

Dr. Tom Field, University of Nebraska-Lincoln, Lincoln, Nebraska



Tom Field, PhD serves the people of Nebraska as the Director of the Engler Agribusiness Entrepreneurship Program and holder of the Engler Chair in Entrepreneurship at the University of Nebraska – Lincoln. An enthusiastic advocate for free enterprise, the potential of young people and opportunities in both agriculture and rural communities,

Tom is an internationally recognized educator and innovator who has the ability to connect the dots between people, industries, and ideas. A fifth generation cattleman who is partnership in a family cow-calf business in western Colorado, he also authors the column "Out of the Box", consults and advises a number of enterprises and organizations, and is a sought after speaker who challenges and inspires audiences to lead their organizations to excellence by asking the right questions, seeking solutions beyond conventional wisdom, and unleashing the power of focused creativity. He and his wife Laura and their family live near Raymond, NE. Tom is a native Coloradoan and earned his bachelors, masters and doctoral degrees at Colorado State University.

Dr. Ray Asebedo, Topcon, Manhattan, Kansas



Ray Asebedo is a Kansas native. He received his bachelor's in agronomy and Ph.D. in soil fertility. Dr. Asebedo has focused his research program on developing agronomic algorithms for use in UAVs and machine platforms. Dr. Asebedo is currently working Topcon and

KSU for developing crop and cattle applications for UAVs to improve profitability.

Dr. Luís Mendonça, Kansas State University, Manhattan, Kansas



Dr. Luís Mendonça received a D.V.M degree in 2006 at Universidade Estadual de Maringá, Brazil. In 2007 he worked in a private practice that specialized in reproductive management and technologies (i.e. embryo transfer and in vitro embryo production), providing services to clients across various states of Brazil and in Bolivia. In 2008 he was hired as a postgraduate researcher at the Veterinary Medicine Teaching and Research Center in Tulare, CA, where he worked in large dairy operations and was involved in different aspects of dairy production research. He obtained his M.S. degree and completed his residency in Dairy Production Medicine (2012) at the College of Veterinary Medicine, University of Minnesota. Dr. Mendonça joined the Department of Animal Sciences and Industry at Kansas State University in 2013 as a State Dairy Extension Specialist where he now has a 30% research and 70% extension appointment. His current roles and responsibilities include development of an extension and research program addressing issues facing the Kansas and U.S. dairy industry. His goal is to continue carrying out research related to immune function, health, heat abatement, and reproductive management of dairy cattle.

Dr. Megan Rolf, Kansas State University, Manhattan, Kansas

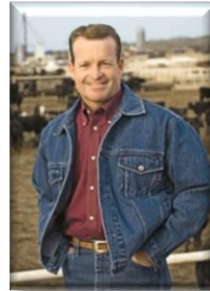


Megan Rolf was raised on a cow/calf operation in east central Kansas and has been involved with livestock her entire life. She received a bachelor's degree in animal science at Kansas State University and a M.S. degree in animal science at the University of Missouri-Columbia. She also earned her Ph.D. in Genetics at the University of Missouri, where her research focused on the implementation of genomic evaluations in crossbred beef cattle.

After graduation, Megan was on faculty at Oklahoma State University for four years, where she served as a State Extension Beef Specialist. She joined the faculty at Kansas State University in 2016 as an Assistant Professor of Animal Breeding with a 60% research and 40% teaching appointment. She currently teaches Genetics and

maintains an active research program in the use of genomics for genetic improvement in livestock.

Mr. John Bulter, Beef Marketing Group, Manhattan, Kansas



John Butler serves as the Chief Executive Officer of the Beef Marketing Group (BMG). BMG is a producer cooperative consisting of 19 cattle Feeding and growing operations located in states of Kansas and Nebraska. The cooperative formed in 1987 harvests 600,000 cattle annually and with Butlers guidance, has been focusing on consistently producing value added beef and beef products that that meet customer demands. The group has developed a number of initiatives that have provided end –users with a constant supply of high quality specified beef products.

BMG has implemented across all of its operations Progressive Beef, a verified system of best management practices which include components of Food Safety, Animal Care and Sustainability.

Butler is a second generation cattle producer and has spent his career building and implementing beef programs with the end in mind from the beginning. John has served in a number of industry leadership roles including Chairman of the 2016-2020 Industry Long Range Plan, Chair of the United States Round Table for Sustainable Beef, and an Executive Committee member of the US Meat Export Federation. John also serves as a Non –Resident Fellow for the Noble Foundation. John and his wife Sandy have two children and live in Manhattan Kansas.

Dr. Dale Blasi, Kansas State University, Manhattan, Kansas



Dale A. Blasi received his B.S. in Animal Sciences at Colorado State in 1984. In 1986, he received his M.S. in Beef Systems Management at Colorado State and Ph.D. degree in 1989 from the University of Nebraska. Blasi is a Professor in the Department of Animal Sciences and Industry and a State Beef Extension Specialist. His responsibilities include providing statewide educational leadership in stocker cattle nutrition and management and utilization of grazed and harvested forages by beef cattle and other livestock. He is manager and director of the KSU Beef Stocker Unit and Animal Identification Knowledge Laboratory.

Mr. Mark Gardiner
Gardiner Angus Ranch

Pursuing,
adopting and
leveraging
technology




Pursuing, adopting and leveraging technology



MARK GARDINER

GARDINER ANGUS RANCH
Ashland, Kansas
U.S.A.



K-STATE RANCHING SUMMIT

Beef 2030—Pursuing technology, transparency and profitability

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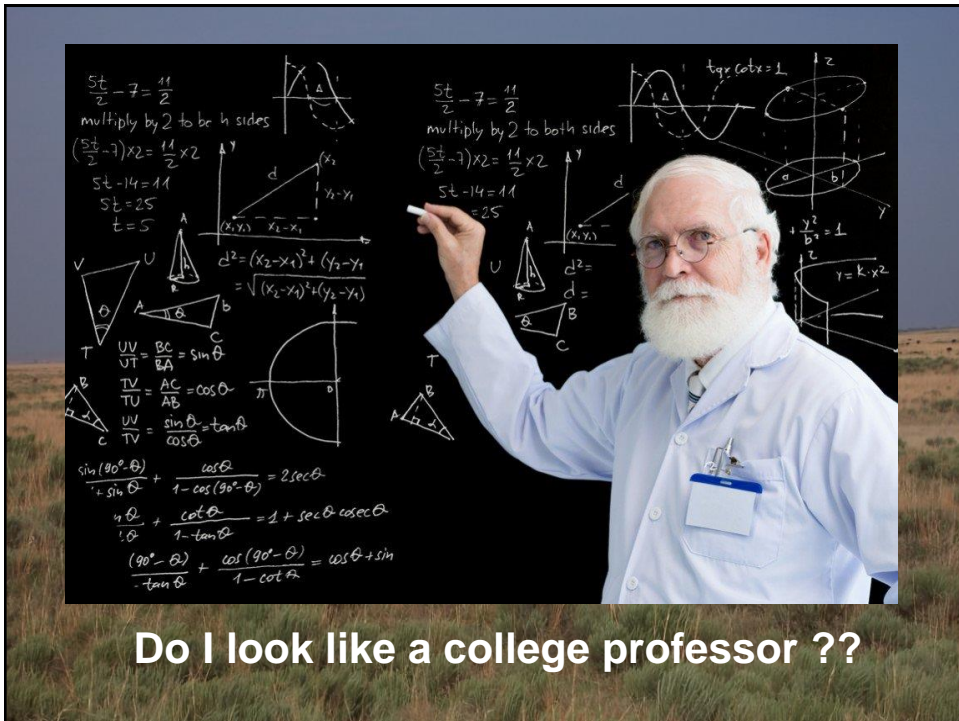
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8:30 AM	Registration
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9:15 AM	Pursuing, adopting and leveraging technology
	Mark Gardiner, Gardiner Angus, Ashland, KS

“Issues to cover are maintaining profitability through weather, market and the ongoing challenges for beef producers”

C'mon man !!



Do I look like a college professor ??



Does this look like a college campus ??

THE RANCH

- 48,000 acres – Avg. annual rainfall - 18"
- Native range 42,000 acres
- Wheat 5,000 acres
- Alfalfa 1,000 acres



CATTLE: GARDINER ANGUS RANCH

- 2000 commercial cows
- 1500 registered cows & heifers

CATTLE: COOPERATOR HERDS

- 4 contract recipient herds (1500 calves /yr)
- 30 GAR Allied Producers (1000 calves/yr)

MARKETING: FOUR SALES ANNUALLY

Bulls

- 1500 – Fall, Spring, January, and May Sales
- 1000+ – Private treaty

Females

- 700 Registered – Spring and Fall Sales
- 1000+ Commercial – Spring and Fall Sales



**Business Philosophy –
produce the “right”
product
to help our customers
reach THEIR goals.**

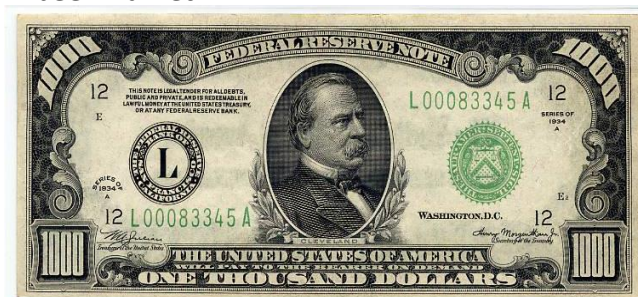


GARDINER ANGUS RANCH

Breeding Philosophy

Goal: to produce “pounds in the right package.”

**We expect to put our customers in position to
capture the added value available in today’s
beef market.**



GARDINER ANGUS RANCH

How do we **ADD VALUE**



to our customer's cattle?

GARDINER ANGUS RANCH

K
K-STATE RANCHING SUMMIT

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Agenda

**“Disruptive technologies and the Beef Industry”
Dr. Tom Field**

10:00 AM **Mark Gardiner, Gardiner Angus, Ash**
Managerial accounting: key numbers for ranch managers

10:45 AM **Tyson Johnson, Sooner Cattle Co., Pawhuska, OK**

11:15 AM **TECHNOLOGY DISRUPTION**
Technology disruption is the process whereby a small company with few resources successfully challenges a larger established incumbent business or invents entirely new markets.

12:00 PM

12:15 PM **Disruptive technologies and the Beef Industry**

1:00 PM **Tom Field, University of Nebraska, Lincoln, NE**



U.S. Premium Beef

Since 1885




Founding member
in 1996

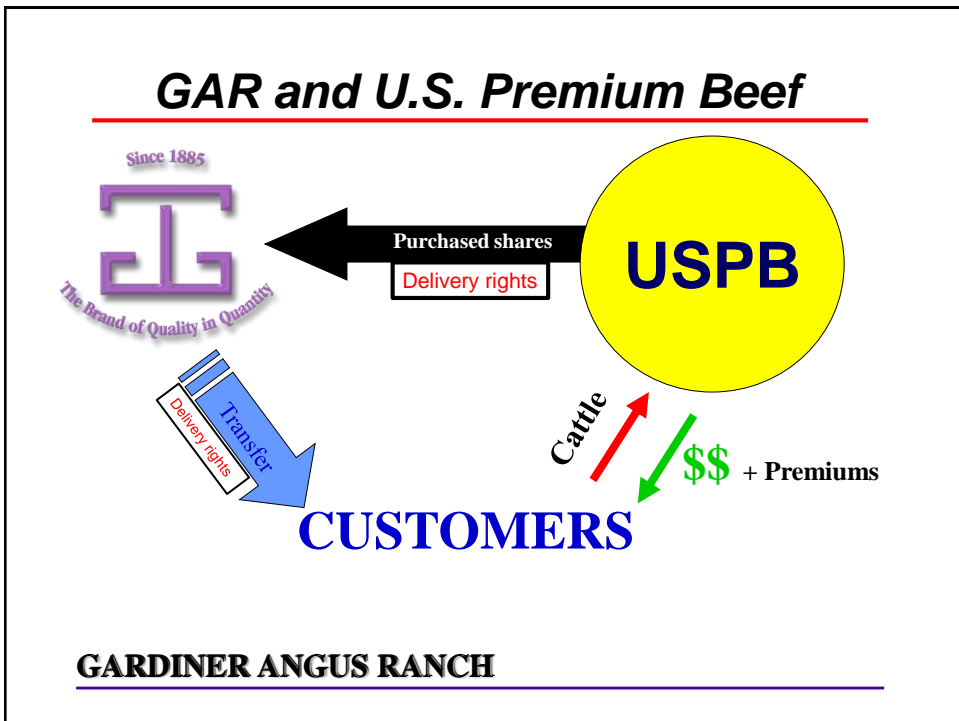


- Shares tied to delivery rights (obligation)
- Delivery rights can be leased/ transferred
- Best value-based grid in industry

GARDINER ANGUS RANCH

 Value-Based Grid											
+ Prime	<i>Prime/Choice Spread</i>										
+ Certified Angus Beef	<i>CAB Premium over Choice</i>										
+ Black Canyon Angus Beef	<i>\$.50 Premium over Choice</i>										
+ Choice or Higher (>60%)	<i>Choice/Select Spread (add)</i>										
- Below Choice (>50%)	<i>Choice/Select Spread (deduct)</i>										
+ - Yield Grade	<table border="0"> <tr><td>1</td><td>+\$4.00</td></tr> <tr><td>2</td><td>+\$2.00</td></tr> <tr><td>3</td><td></td></tr> <tr><td>4</td><td>-\$10.00</td></tr> <tr><td>5</td><td>-\$20.00</td></tr> </table>	1	+\$4.00	2	+\$2.00	3		4	-\$10.00	5	-\$20.00
1	+\$4.00										
2	+\$2.00										
3											
4	-\$10.00										
5	-\$20.00										
- Heavy Carcass	<i>1050# and up -\$20.00</i>										

GARDINER ANGUS RANCH



Feedyard: MCLEOD FARMS, INC.
Lot #: 326 **USPB Lot #:** 169920
Method: USPB Base Grid
Slaughter: 8/9/2017 **Plant:** Liberal
FY Lot #: 406 **Pen #:** 44



National Beef™

Lot Statistics

Avg Live Wt: 1,357 **Net Live Price:** \$124.66 **Net Live Prem/Disc:** \$111.13/Hd
Avg Hot Wt: 863 **Net Hot Price:** \$195.99 **Difference:** \$8.19/cwt
Hot Yield: 63.61%

Base Price		Prem Summary	
USPB USDA KS Average	116.47	Choice	10.78
Formula Allowance	0.25	Prime	31.94
Grid Allowance	0.00	CAB	3.00
Base Live Price	116.72	BCPR	0.50
Hot Yield Threshold	63.66%		
Base Hot Price	183.35		

GARDINER ANGUS RANCH

“Capture the Value”




National Beef™



	Pounds	Percent	Head
Totals	321,025		372
<u>Choice & Higher</u>	320,435	99.82%	371
CAB	201,482	62.76%	234
BCPR	26,579	8.28%	31
Prime	83,831	26.11%	95
<u>Choice</u>	236,604	73.70%	276
Select	590	0.18%	1
Ungraded	0	0%	0
Hard Bone	0	0%	0
Over 30 Month	0	0%	0
Yield Grade 1	5,418	1.69%	7
Yield Grade 2	106,877	33.29%	127
Yield Grade 3	170,501	53.11%	196
Yield Grade 4	37,375	11.64%	41
Yield Grade 5	854	0.27%	1
575/Down	548	0.17%	1
1050/Up	0	0%	0

GARDINER ANGUS RANCH

"Capture the Value"




Prime

Choice++

Choice 0

Choice -

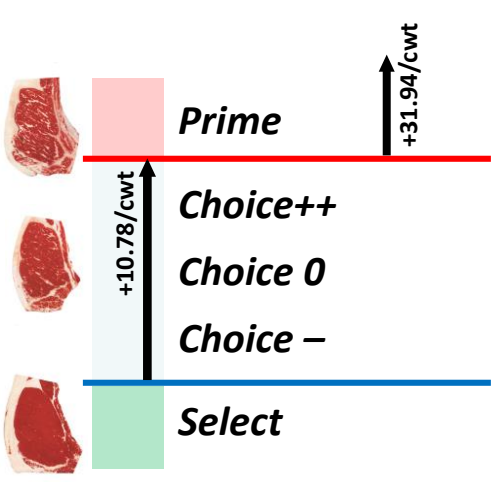
Select



Prem Summary	
Choice	10.78
Prime	31.94
CAB	3.00

GARDINER ANGUS RANCH

"Capture the Value"




Prime +31.94/cwt

Choice++ +10.78/cwt

Choice 0

Choice -

Select



Prem Summary	
Choice	10.78
Prime	31.94
CAB	3.00

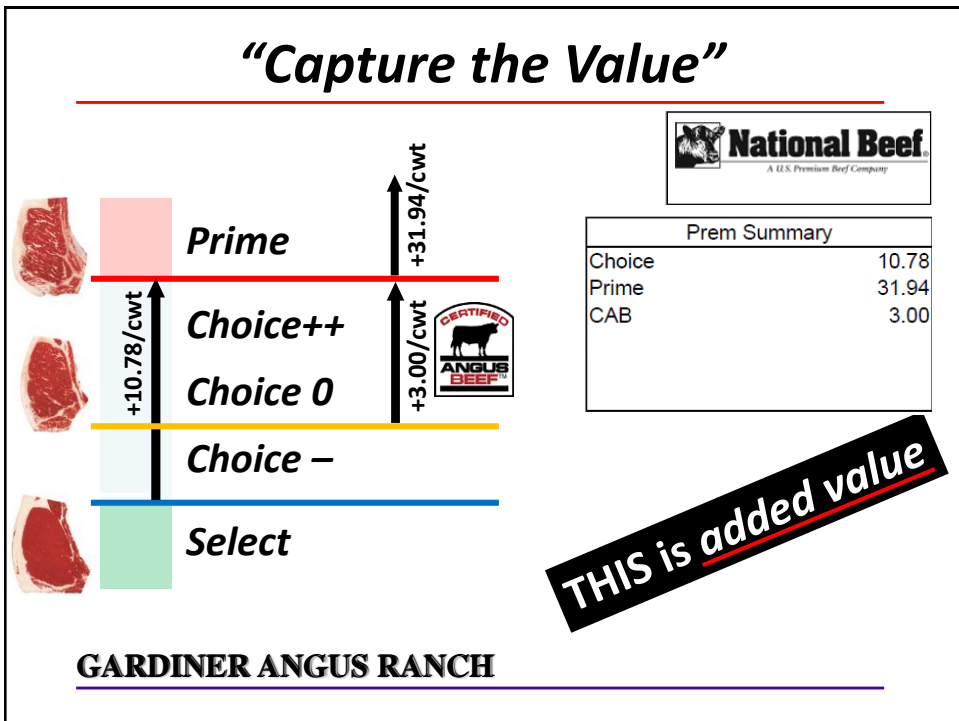
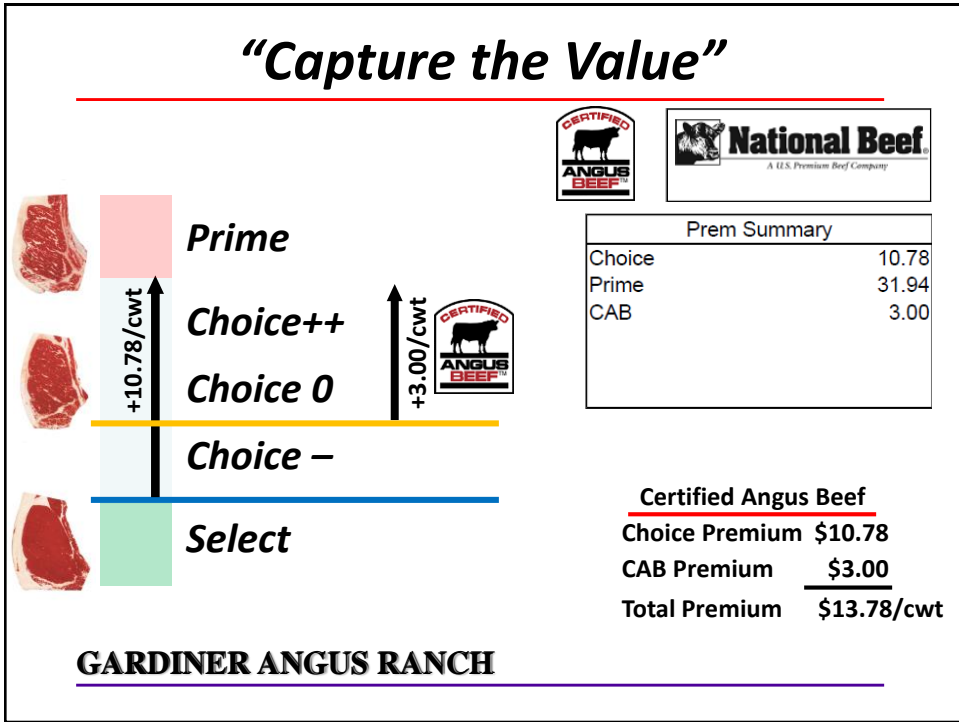
PRIME

Choice Premium \$10.78

Prime Premium \$31.94

Total Premium \$42.72/cwt

GARDINER ANGUS RANCH



"Capture the Value"

Feedyard: MCLEOD FARMS, INC.
 Lot #: 326 USPB Lot #: 169920
 Method: USPB Base Grid
 Slaughter: 8/9/2017 Plant: Liberal
 FY Lot #: 406 Pen #: 44

Cattle Settlement Worksheet



Base Price	
USPB USDA KS Average	116.47
Formula Allowance	0.25
Grid Allowance	0.00
Base Live Price	116.72
Hot Yield Threshold	63.66%
Base Hot Price	183.35

Prem Summary	
Choice	10.78
Prime	31.94
CAB	3.00

Look at a closeout for an individual steer



GARDINER ANGUS RANCH

"Capture the Value"



Opportunity to sell = **\$1,134.00**
 @ 810 lbs x \$140.00/cwt



Feedlot Gain = **\$366.49**
 547 lbs @ \$0.67/lb



BREAKEVEN = **\$1,500.49**
 Live Cash Market Value

GARDINER ANGUS RANCH

"Capture the Value"



BREAKEVEN \$1,500.49
Live Cash Market Value

Sell on Live Cash Market
@ 1,357 lbs x \$116

\$202.32 profit
over the breakeven value

Live Price



Sell on USPB Grid
@ Base Price +/- Premiums

Base Price \$1,583.89

Choice Premium

YG/Weight Dis

Branded P

\$122.31 premium
+ \$25.89

\$80.01 profit

\$1,702.81

GARDINER ANGUS RANCH

"Capture the Value"



BREAKEVEN \$1,500.49
Live Cash Market Value

Sell on Live Cash Market
@ 1,357 lbs x \$116

\$452.07 profit
over the breakeven value

Live Price



Sell on USPB Grid
@ Base Price +/- Premiums

Base Price \$1,583.89

Choice Premium

Prime Carcass P

YG/Weight Dis

\$372.06 premium
+ \$0.00

\$80.01 profit

\$1,952.56

GARDINER ANGUS RANCH

“Capture the Value”

Use GARDINER GENETICS
SELL as feeder calf

Use GARDINER GENETICS
FEED/SELL on live market

Use GARDINER GENETICS
FEED/SELL on USPB grid

GARDINER ANGUS RANCH

GAR/GAR Customers' Carcass Results – May 2017-July 2018

	HEAD	LIVE WT	QUALITY GRADE %CH OR HIGHER	%PRIME	WEEK'S MARKET	GRID\$/HD	+/- MARKET
GARDINER ANGUS	848						
GARDINER CUSTOMERS	4104						
WEIGHTED AVERAGE/SUM	4952						

*GAR customer names withheld due to privacy concerns

\$474,953 above base price

GARDINER ANGUS RANCH

From 1998 through 2018
GAR customers marketed 92,000 head through
U.S. Premium Beef, receiving an average
premium of \$94 per head, totaling...

\$8,676,420

ABOVE CASH MARKET.



“Capture the Value”



Shareholder/Unitholder Benefits 1997-2018

- ❑ Cattle Delivered 15 million
- ❑ Grid Premiums \$ 500 million
- ❑ Patronage Payments \$ 84 million
- ❑ Distributions \$ 993 million

Total Benefits - \$1.58 Billion

GARDINER ANGUS RANCH

1964: GAR becomes TOTAL AI



Artificial insemination was new (**disruptive**) technology!

**THIS WAS OUR
COMPUTER !**

Because of technology, a bull hasn't bred a cow at GAR in 54 years!

GARDINER ANGUS RANCH

Technology • Relationships • Progress



GARDINER ANGUS RANCH

Technology • Relationships • Progress



RISK MANAGEMENT

Kendal Kay • Stockgrowers State Bank

GARDINER ANGUS RANCH

Technology • Relationships • Progress



CRISIS MANAGEMENT

Randall Spare • Ashland Veterinary Center

GARDINER ANGUS RANCH

Technology • Relationships • Progress



PROGRESS

Bill Bowman & Sally Northcutt • Method Genetics

GARDINER ANGUS RANCH

Technology • Relationships • Progress



SKIN IN THE GAME

Steve Hunt • CEO, U.S. Premium Beef (retired)

GARDINER ANGUS RANCH

Technology • Relationships • Progress



GARDINER ANGUS RANCH

Mr. Tyson Johnson
Sooner Cattle Co.

**Managerial
Accounting: Key
Numbers for Ranch
Managers**

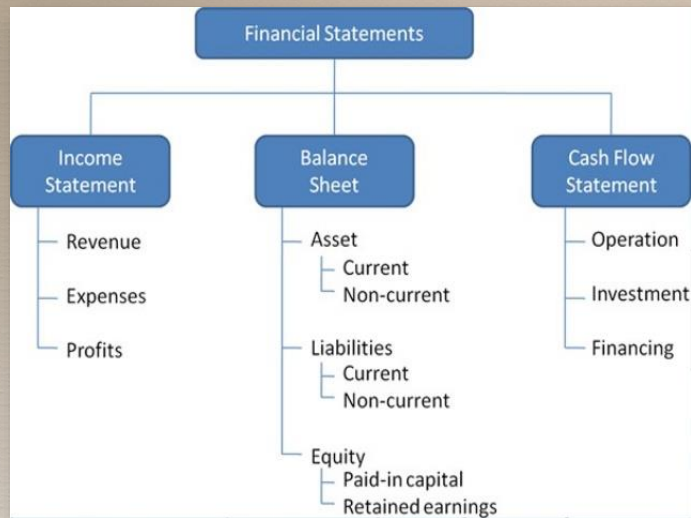


**Managerial Accounting:
Key Performance Indicators**

Tyson Johnson



Accounting Systems



DESERET RANCHES

Managerial Accounting



- What is Managerial Accounting
 - process of preparing management reports and accounts that provide financial and statistical information required to make day-to-day decisions.
 - generates reports for an organization's internal audiences

DESERET RANCHES

Managerial Accounting

- A guy walks into the store and steals \$100 bill from the register without the owner's knowledge. He then buys \$70 worth of goods with the \$100 bill. The owner gives him back \$30 in change. How much money did the owner Lose?



Managerial Accounting

- A guy walks into the store and steals \$100 bill from the register without the owner's knowledge. He then buys \$70 worth of goods with the \$100 bill. The owner gives him back \$30 in change. How much money did the owner Lose?

- A) \$100
- B) \$170
- C) \$200



Managerial Accounting

- A guy walks into the store and steals \$100 bill from the register without the owner's knowledge. He then buys \$70 worth of goods with the \$100 bill. The owner gives him back \$30 in change. How much money did the owner Lose?

- A)\$100
- B)\$170
- C)\$200
- D)It depends



Managerial Accounting

- A guy walks into the store and steals \$100 bill from the register without the owner's knowledge. He then buys \$70 worth of goods with the \$100 bill. The owner gives him back \$30 in change. How much money did the owner Lose?

- A)\$100
 - B)\$170
 - C)\$200
 - D)It depends
- Profit Margin
 - Profit Margin / product
 - Inventory System
 - Opportunity Cost
 - Time value of Money



Transparency & Empowerment

- Strategic Plan
 - Ranches overall direction
- Resource Management Plan
 - Three year plan
 - Facilities
 - Pasture
 - Equipment
- Budget



DESERET  RANCHES

Monthly Report (52 page)

- Inventory
- Detailed financials
- Mortality Rate
- Morbidity Rate: Treatments, temp, case fatality,
- Feed report: lbs. fed/hd./day & total lbs. fed/hd.



DESERET  RANCHES


Understanding Cost

- Fixed Cost:



- Variable Cost:




DESERET  RANCHES

Understanding Costs

- Direct Cost:
 - A cost that can be computed and identified directly with a product, function, or activity.
- Indirect Cost:
 - A cost that is not identifiable with a specific product, function, or activity. (All other Costs)



DESERET  RANCHES

Understanding Cost

- Generally
 - 30 to 40% Direct Cost
 - Managed by marginal cost/marginal gain




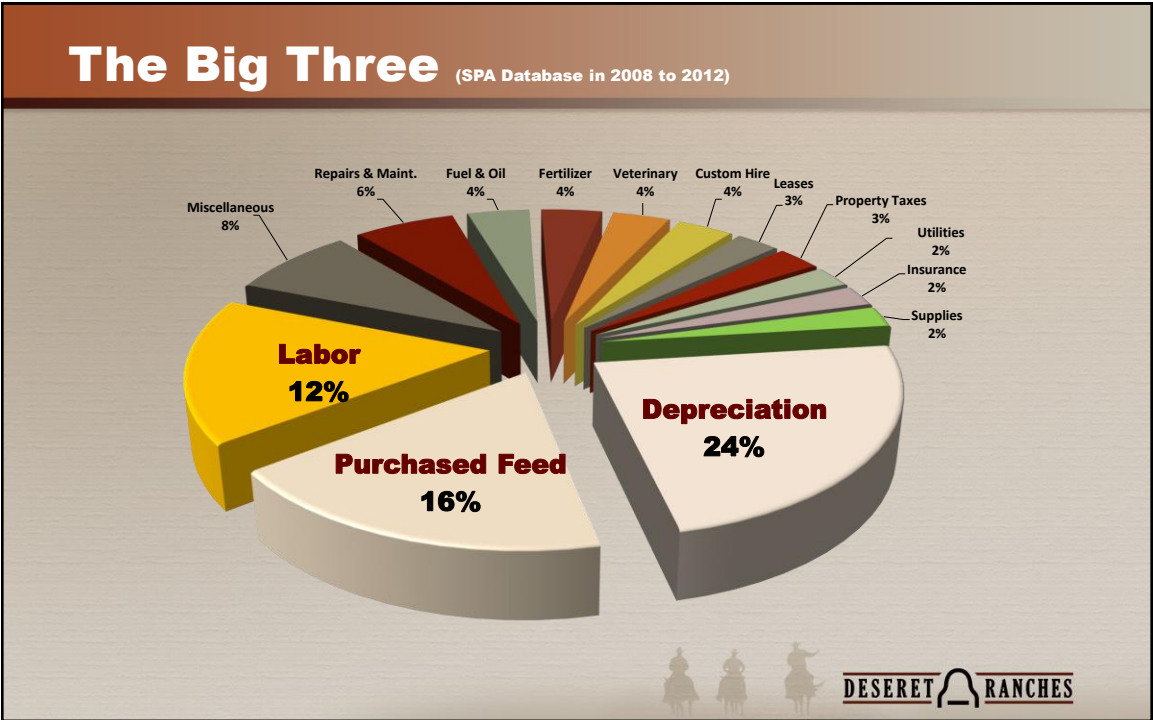
DESERET  RANCHES

Understanding Cost

- Generally
 - 60 to 70% Indirect Cost
 - Managed by:
 - Increased volume produced
 - Improvement in existing processes
 - Innovation, a better way
 - Reduce overall cost, wage war on cost



DESERET  RANCHES



Analyzing the Numbers

- Which Variables Count?
 - Sensitivity Analysis

Purchase Price		NPV
% Change	Land Value	\$1,000,000
30%	2,367	(\$2,500,000)
20%	2,185	(\$1,000,000)
10%	2,003	\$250,000
0%	1,821	\$1,000,000
-10%	1,639	\$2,200,000
-20%	1,457	\$3,500,000
-30%	1,275	\$4,900,000

Weaning Weights		Net Profit
% Change	Weaning W.	\$500,000
30%	632	\$920,000
20%	575	\$780,000
10%	523	\$650,000
0%	475	\$500,000
-10%	428	\$300,000
-20%	385	\$175,000
-30%	346	(\$90,000)

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Project Analysis

- Net Present Value
 - Internal Rate of Return
 - Hurdle Rate
 - Time Value of Money
 - Cash flow statement



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Accurate and Correct Numbers

- What System Works for you?



Know Your Numbers!




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Key Performance Indicators

- Key performance indicators help managers gauge the effectiveness of various functions and processes important to achieving organizational goals.



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Key Performance Indicators

Big Picture KPI's

- Stocking Rate
- Margin per acre: cattle margin/acre & non-cattle margin/acre
- Inventory: Pregnant & Open Cows
- % System Yield (throughput)
- Weaning %
- Pounds weaned: lbs./acre - Avg. lbs./calf - lbs./exposed female
- Safety: DART rate, WC cost, Incidents



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Key Performance Indicators

Ranch Level

- Pasture Management
 - Stocking Rate - Days rest - Chemical treatment – Burn – Soil sample
 - Forage sample
- Cost
 - Cost per head – Cost per pound produced/gain
- Animal Performance
 - lbs. gain/acre - lbs. produced/acre



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Application of Accounting



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Application of Accounting



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Application of Accounting



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Conclusion

Knowledge without practical use is a lot like a glass eye,
It's all for show!



Wrap-up

- Accurate Numbers
 - Trash in = Trash out
- Understanding Cost
 - Know how to manage your costs
- KPI's
 - What are your objectives
- Application of Accounting
 - It's a Mindset



One More Thing



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One More Thing



Welcome to the Real World!!!



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THANK YOU



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Mr. Don Close
Rabo AgriFinance

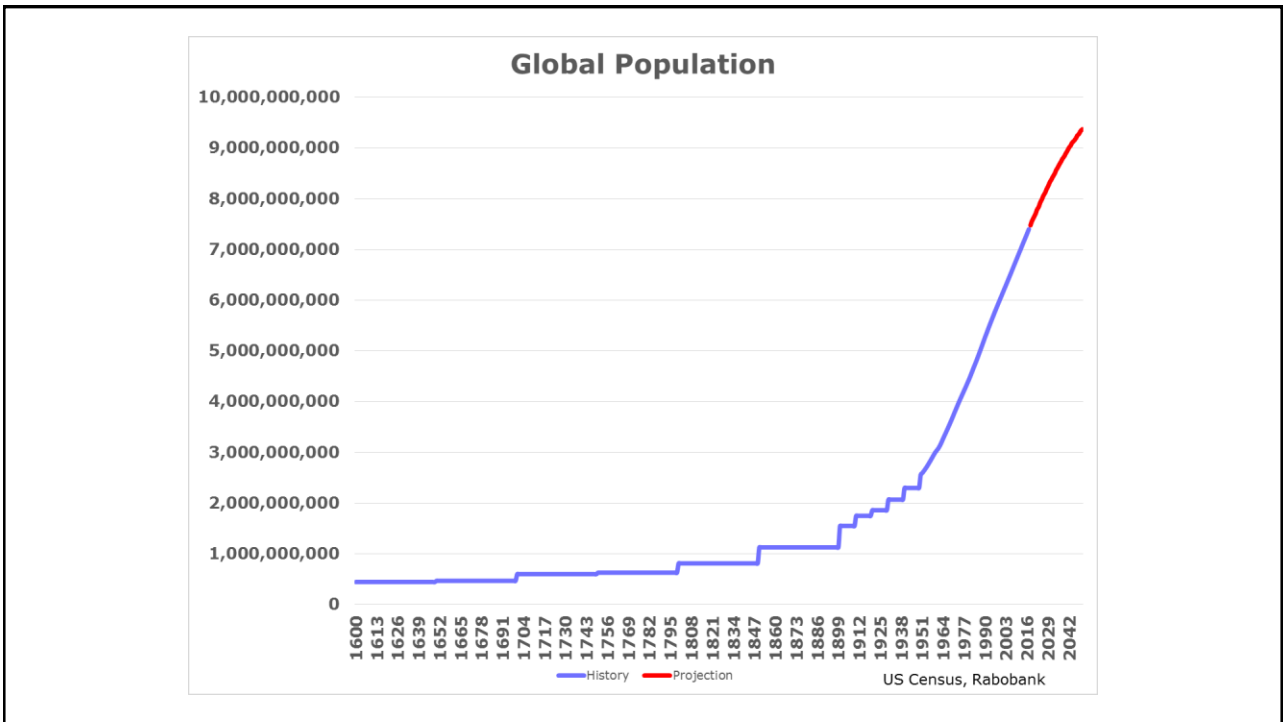
What Can We Learn From Consumer Trends

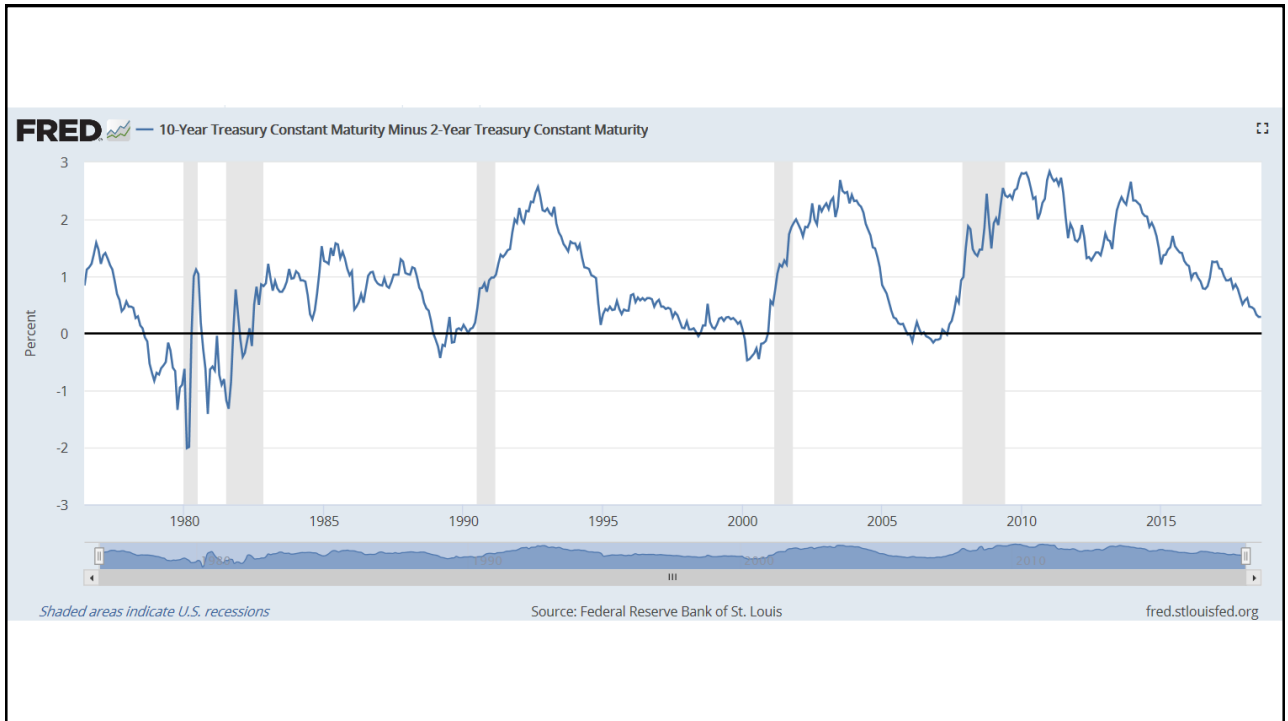


Rabobank

Food Fight!

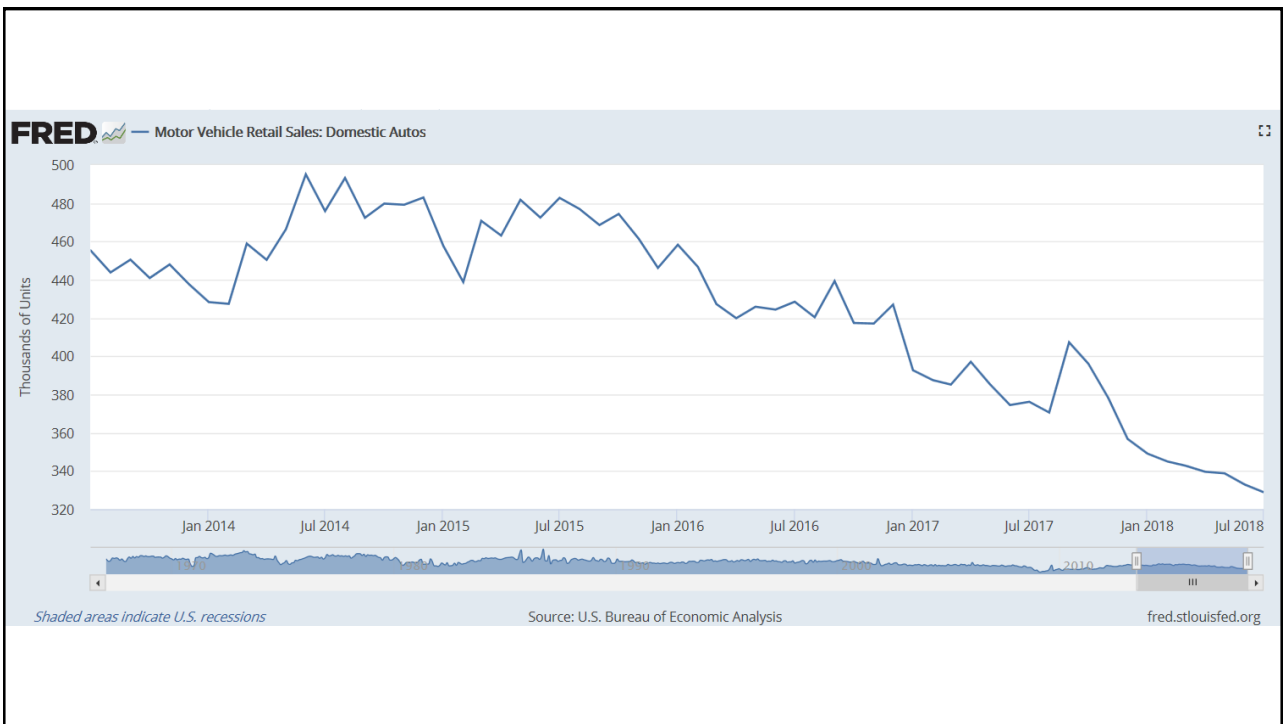
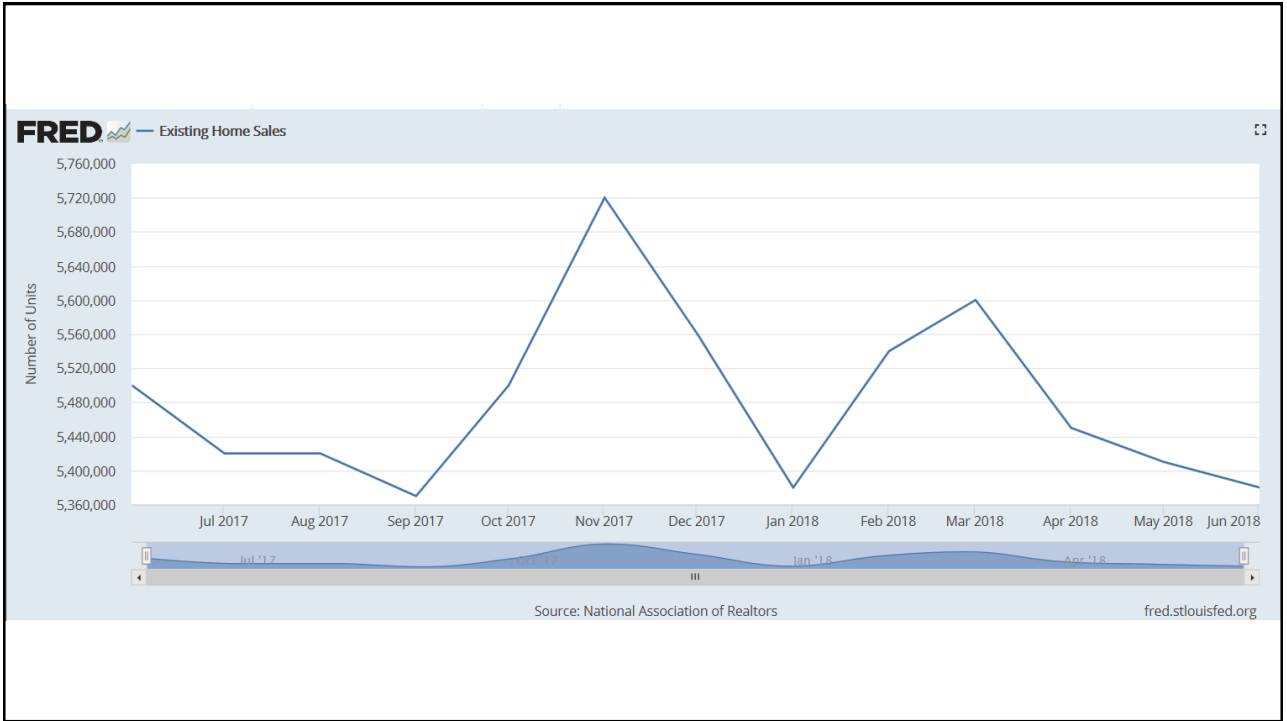
*Online and Brick & Mortar Battle for Business.
How Can Beef Ensure a Seat at the Table?*





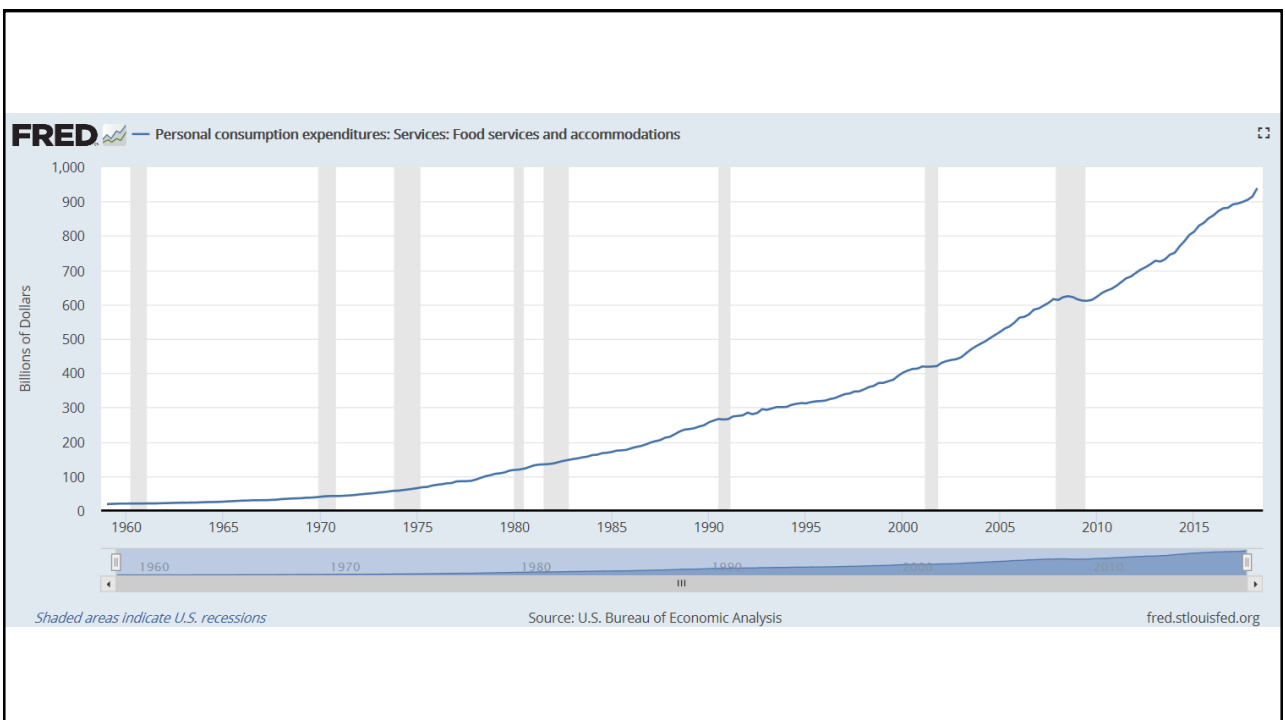
US National Debt

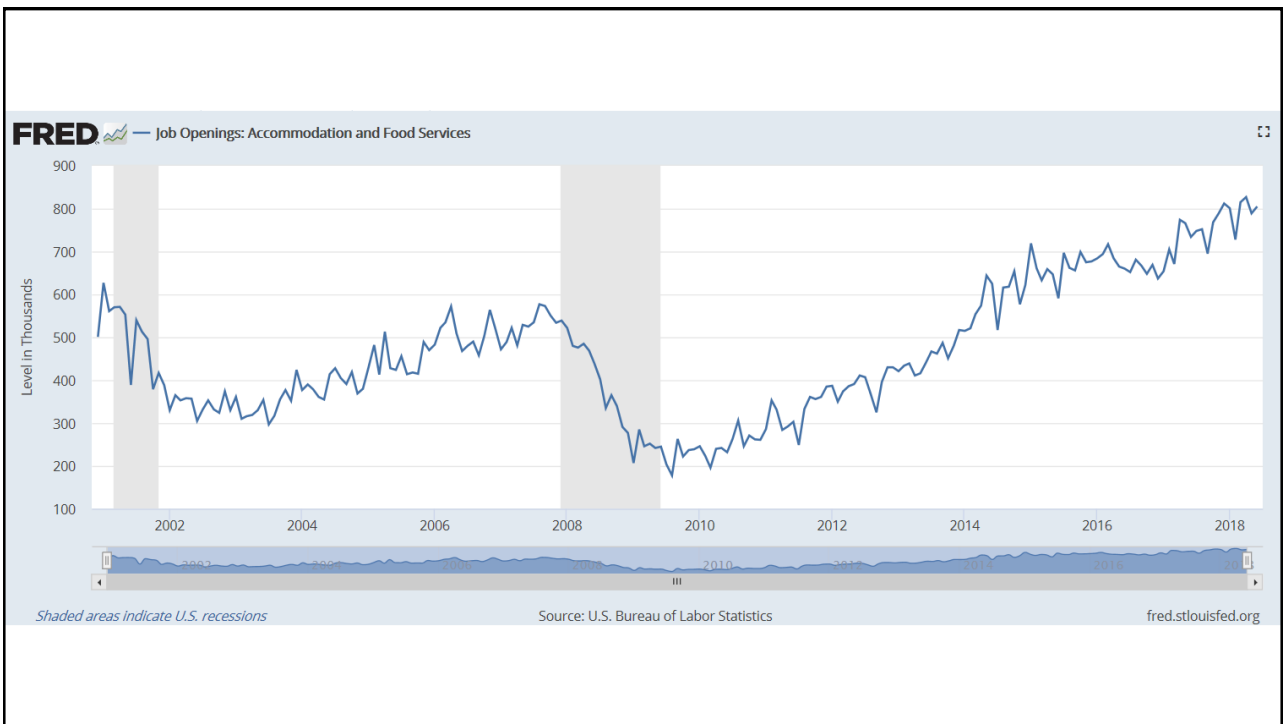
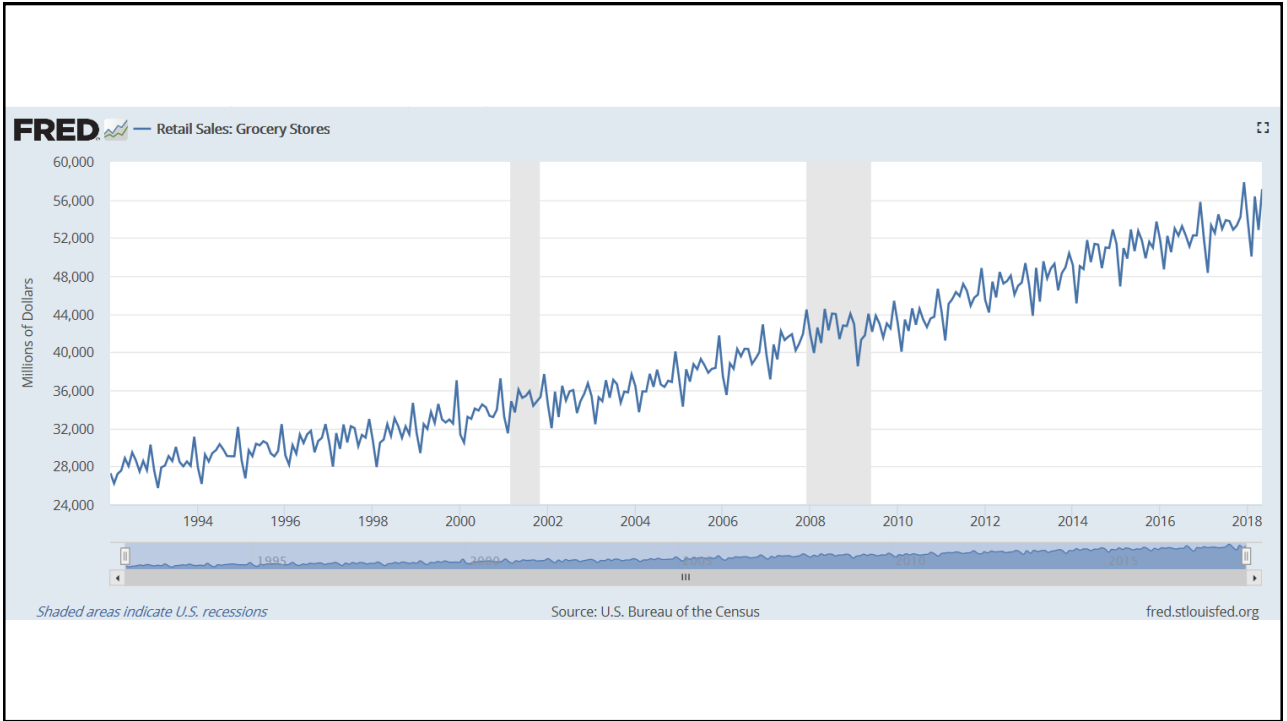
\$21,344,744,890,576.05



Since the Last Recession:

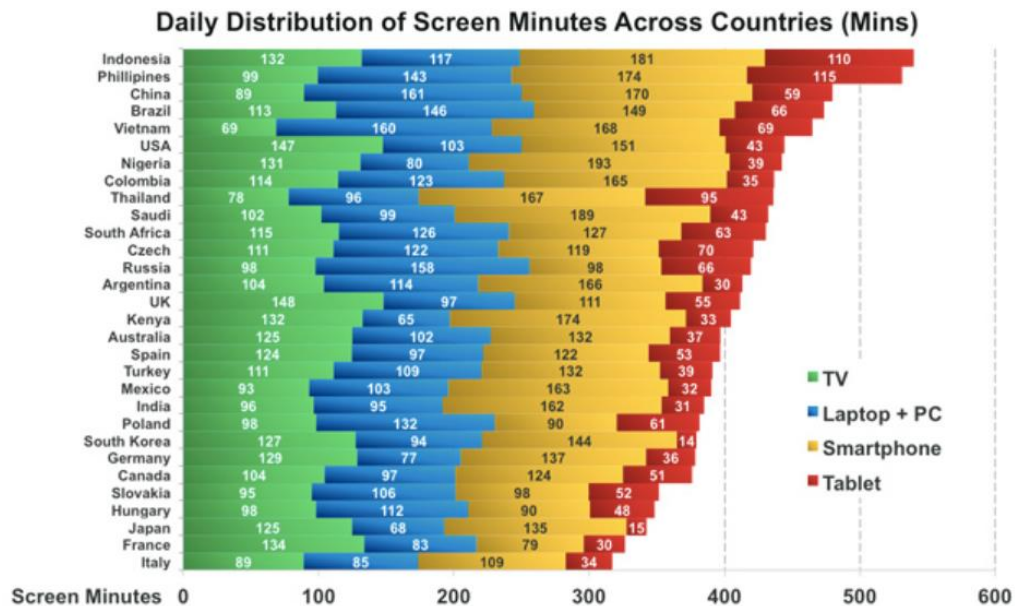
- Beef Herd Expansion
- The Premium Burger Craze
- Demand for High End and Ultra High End Middle Meats
- Meal Kits
- Restaurant Delivery
- Click and Pic
- Restaurant App Reservations and Ordering
- Restaurant Meals Delivered to Your Airline Gate Before Take Off





Transition to Online Groceries:

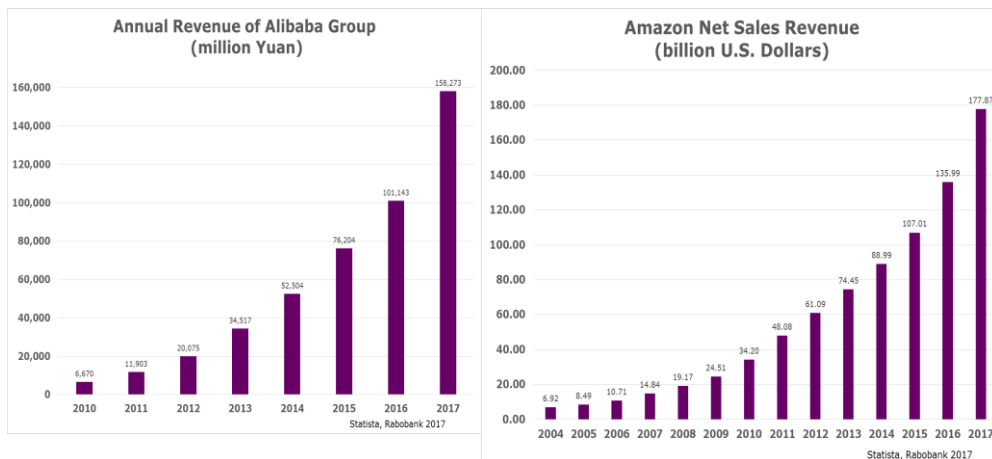
- Convenience, Convenience, Convenience has Replaced
- Location, Location, Location as Determinant of Success.
- Perception of Transparency.
- Time Savings for Online Shoppers.
- Better Positioned to Offer Food with a Story.



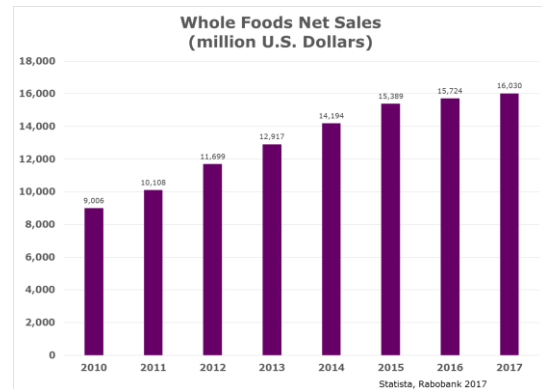
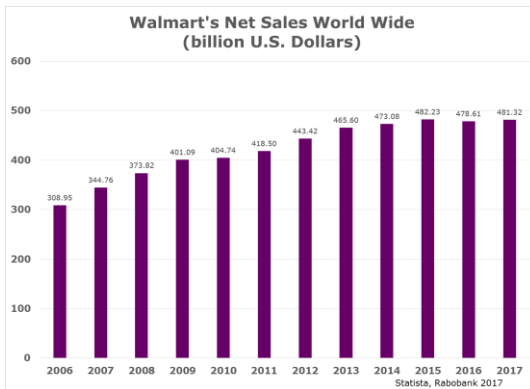
Source: Quartz



Growth in On Line Shopping:



Sales of Conventional are Flat:



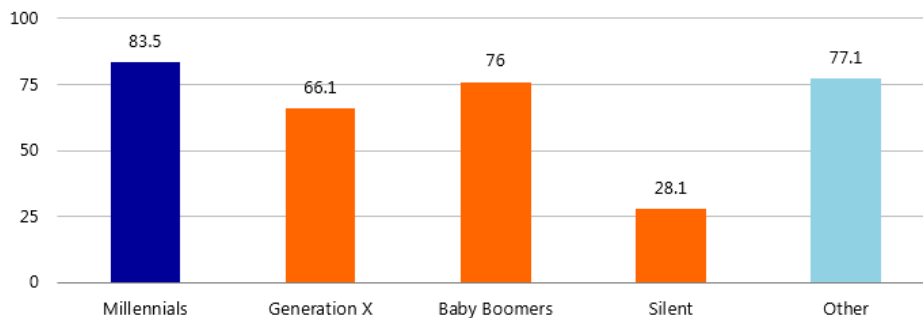
Changing Consumer Behavior:

- 1.5 Trillion Spent on Food with Just Over Half Going to Meals Away from Home.
- 25% of U.S. Shopping Malls are Expected to Close Within 5 Years.
- Meal Deliveries from Conventional Restaurants is the Fastest Growing Segment.
- As Online Shopping and Streaming Entertainment Grows Consumers are Electing to Spend More Time at Home.
- Expenditures for Meals at Home is Expected to Regain the Majority Over Meals Away From Home.

The growing food fight among meal-kit companies



Figure 2: U.S. Population by Generation (Millions), 2015



Source: United States Census Bureau 2015

On Line Groceries:

- In June 2017 Amazon Purchased Whole Foods Market for 13.7 Billion
- Viewed by many as the Launch of Online Groceries. Acceleration
- Peapod Home Delivery Started in Chicago in 1989.

- Current estimates are online groceries in the US from 2% to 4%
- Estimated to be on top of 20% to 25% by 2025.

- Driven by Escalating Competition the Number of Conventional Grocery Stores are Expected to Decline.

What is the Impact to the Cattle & Beef Industry?

Meal Kits:

Pro:

Can Introduce Beef Offerings to Non and Low Beef Eating Consumers.

Can Use Value Cuts that Many Consumers Pass When Shopping on Their Own, that Will Increase Overall Cutout Value.

Con:

Because of Price Competition Success of Meal Kits Could be Detrimental to Per Capita Beef Consumption

Online Groceries:

- Conventional Super Markets of 30,000 to 50,000 Sq Feet
- Offer Between 250,000 and 300,000 SKU's of 3 Million Offered:
- Fresh Beef Offering Bottom Third Choice, Branded, Select.

- Online Grocers Offer Branded Product, Conventional Choice, Ultra High Quality, Breed Specific, Natural, NHTC, Organic, Grass Fed.

- Small Specialty Producers Have Fewer Barriers to Entry.

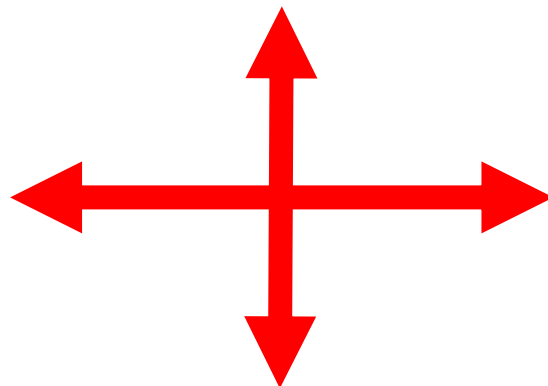
Opposition:

- Major Packers:
 - Starts and Stops to Kill Floor
 - Increased Accounting of Multiple SKU's
 - Increased Requirements of Cooler Space and Boxed Beef Storage

Market Specialization:

- Price Spreads Widen and Premium and Discount Schedule Increases

Price Spread Between
Classes & Quality



Premium & Discount Schedule

Consumers Want to Know Where Their Food Comes From:

- Food With a Story
- Traceability
- Sustainability
- Antibiotic Free
- Hormone Free
- Humanely Raised
- Convenient

- **Affordable**

Industry Choices:

- Use Current Momentum
 - Five Years of Herd Rebuilding
 - Growing Beef Demand
 - Expanding Exports
 - Renewed Acceptance of Increased Protein in Diets

- Wait, Stay in the Existing Comfort Zone Until the Changing Market Mandates Changes or Risk a Return to a Contracting Market Share.

Thank You,



- Don Close
- VP, Food and Agribusiness Research, Animal Protein
- Phone: 314 317 8205
- don.close@raboag.com

GROWING
AMBITION



Dr. Tom Field

University of Nebraska

Disruptive Technologies And The Beef Industry



disrupt 

Tom Field, PhD
Engler Entrepreneurship
University of Nebraska, Lincoln
Engler.UNL.EDU

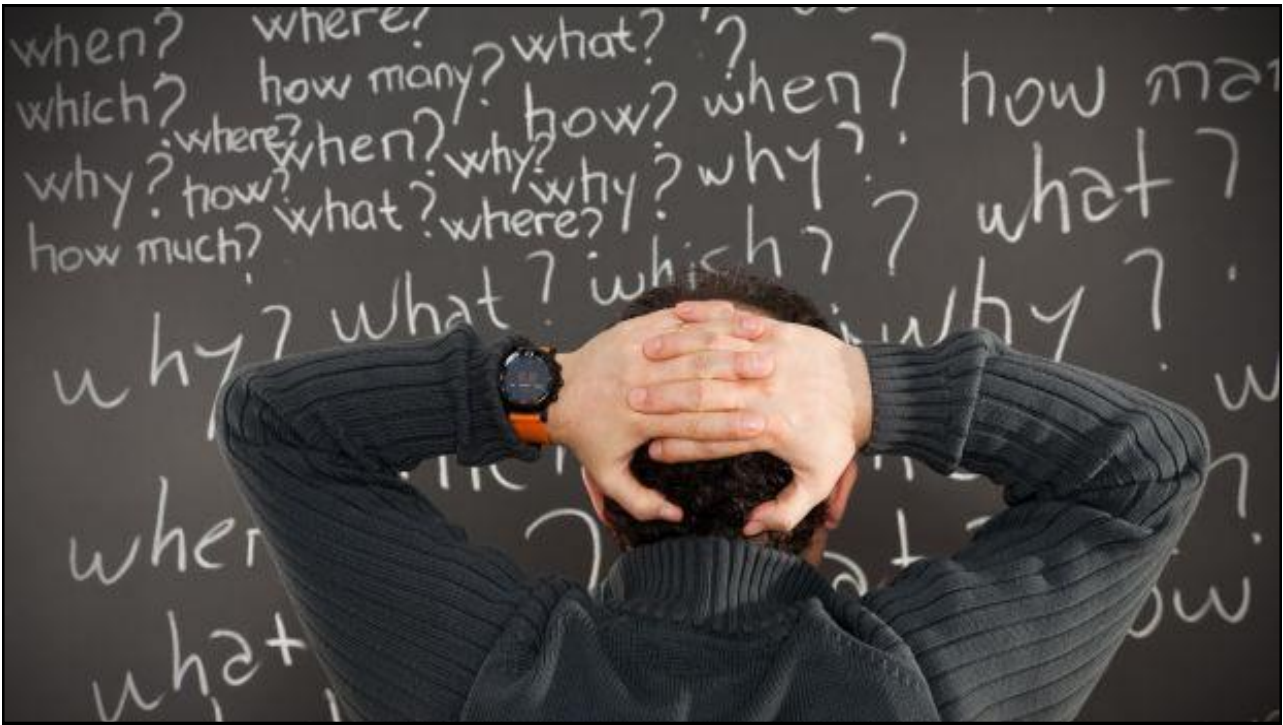
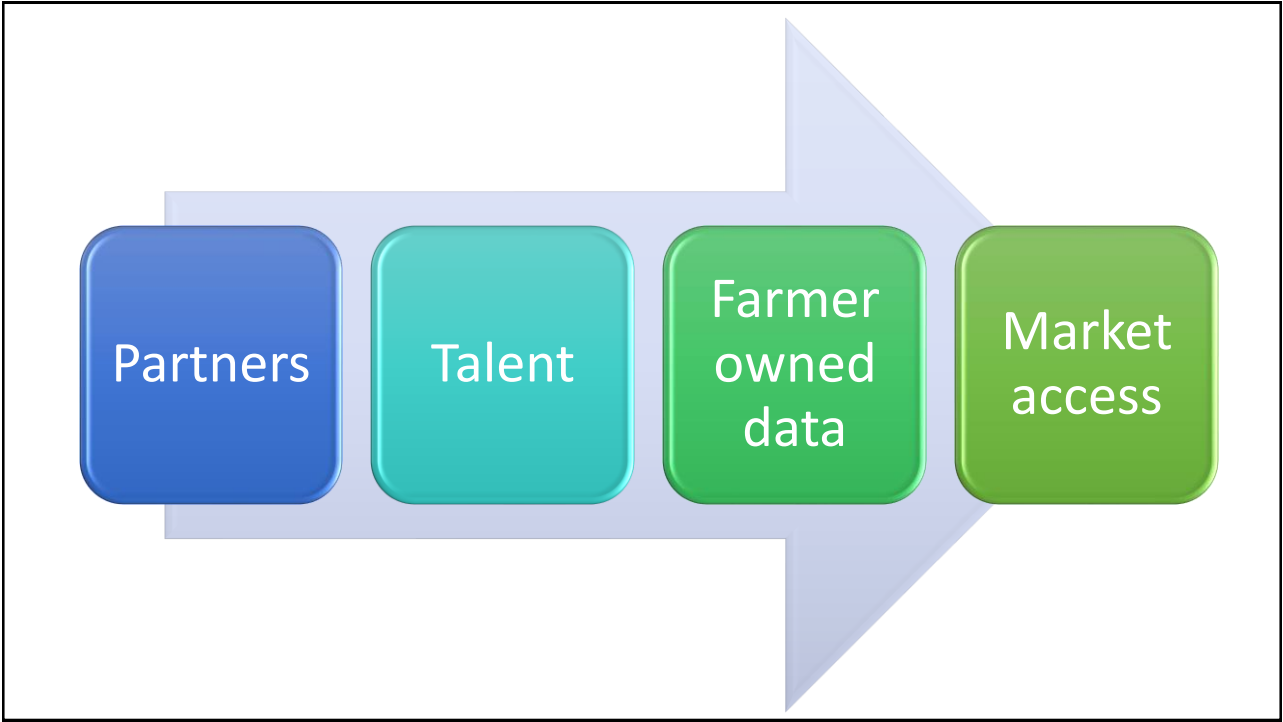






DISRUPTION = BIG OPPORTUNITIES

- **Undervalued assets**
- **Disrupt the existing model**
- **Re-imagine the model**
- **Existing technology applied in a new way**
- **Recurring revenue not dependent on founder's direct involvement**





HELLO
my name is

CHANGE











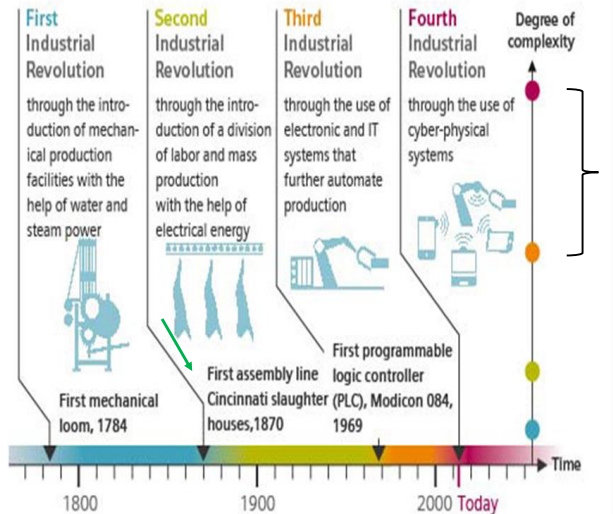






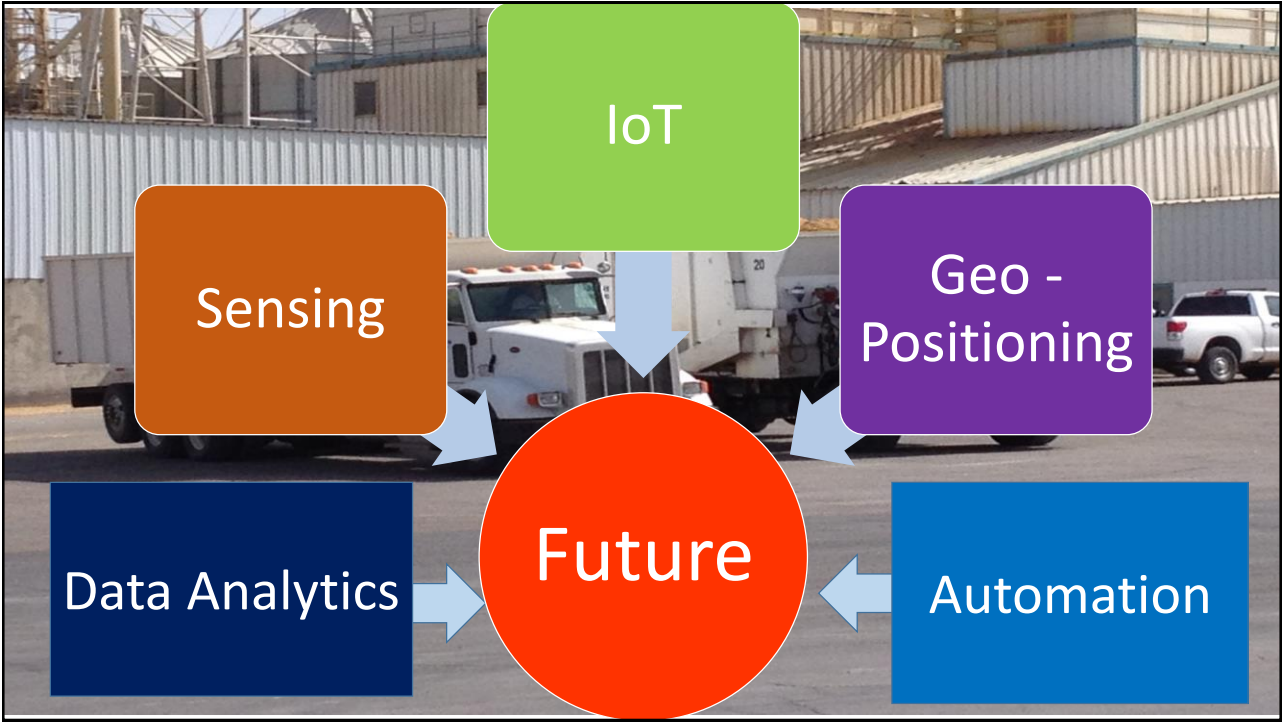
From Industry 1.0 to Industry 4.0

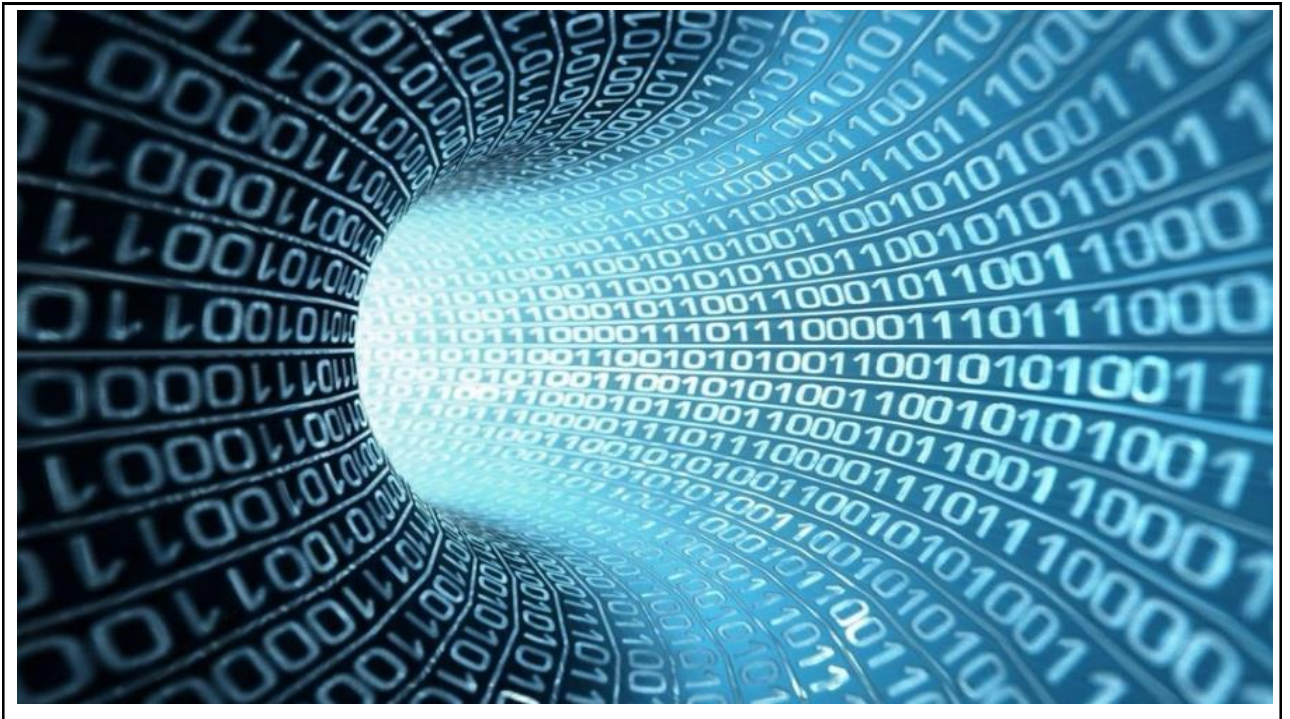
- *Mechanization*
- *Access to Electricity*
- *Repetitive Processes*
- *Data - usually lagging indicators*
- *Lean Manufacturing*
- *Process Control to Reduce Waste*
- *Genetic Evaluation*



Source: DFKI (2011)

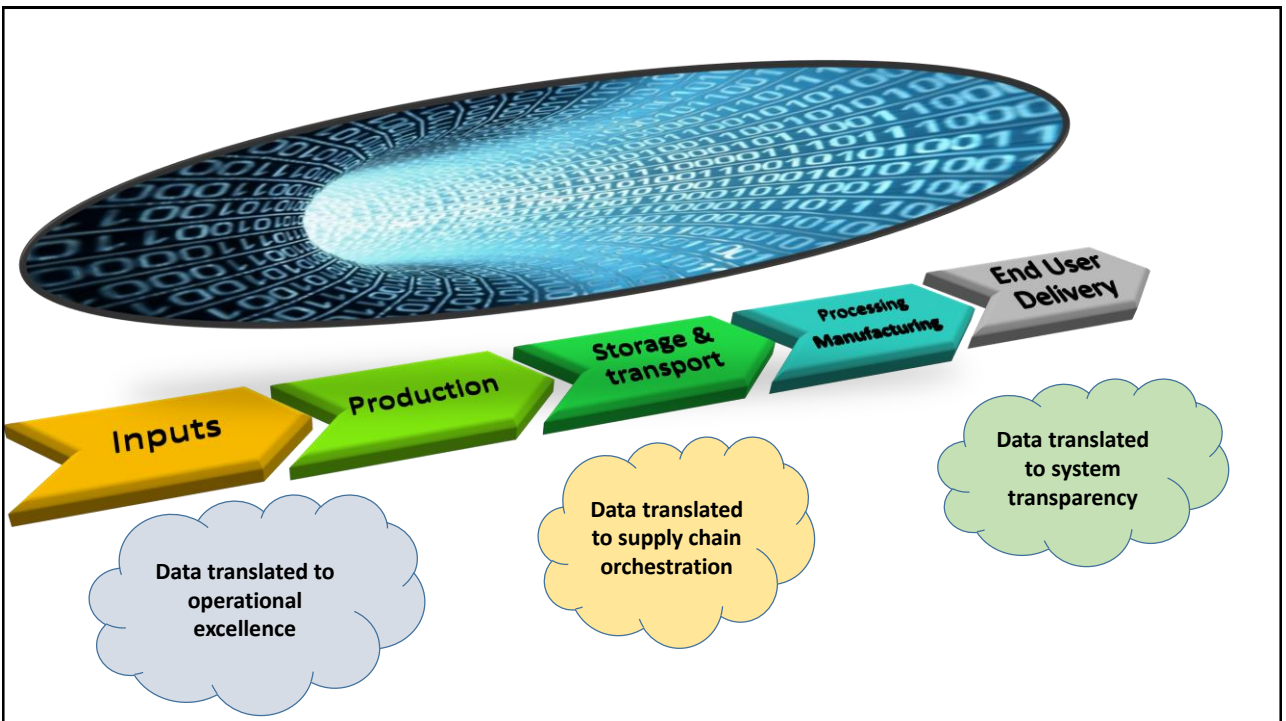






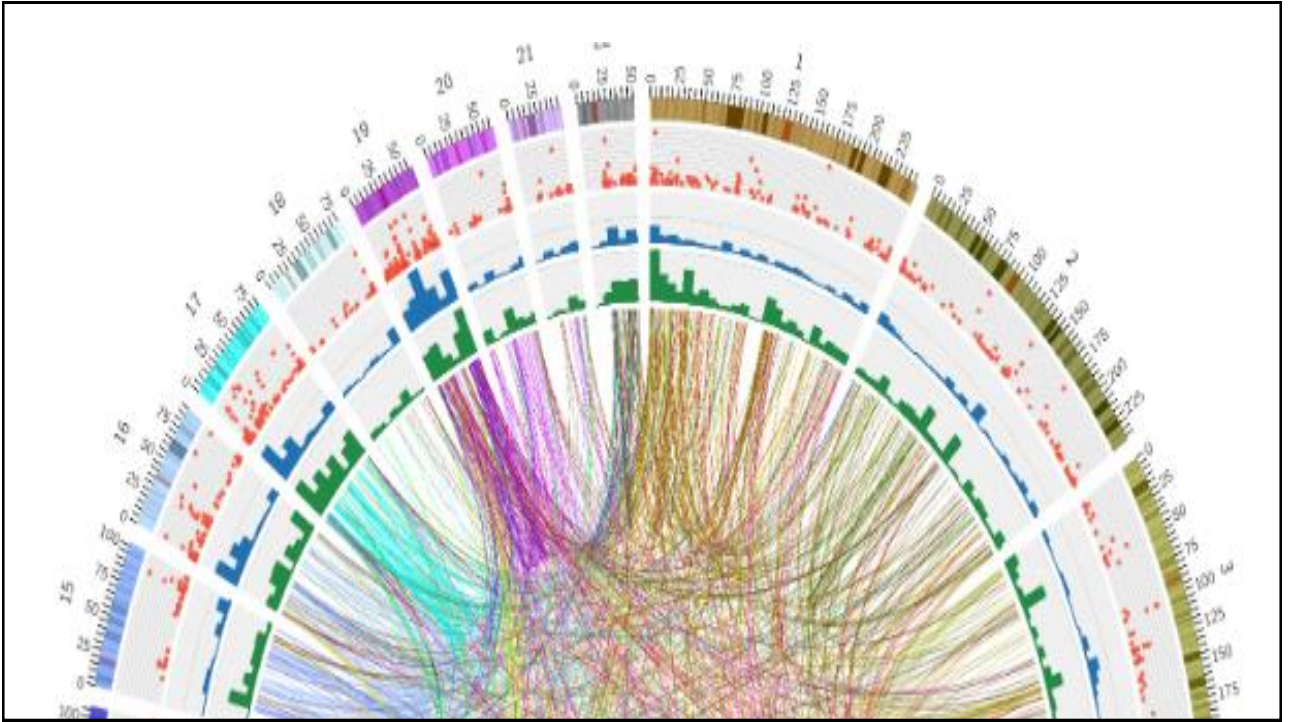
“We know exactly how consumers will spend \$ on food and consumer goods.”

Chief Economist, VISA



AUGMENTED REALITY
PRODUCT INFO
PROMOTION
RECIPES





- Construction & real estate imagery and monitoring
- Infrastructure monitoring and security
- Oil and gas exploration
- Weather forecasting
- Wildlife/ecosystem monitoring
- Precision agriculture





The floor-egg problem

Floor eggs represent thousands of euros in turnover losses, not to mention the human-resources cost of moving hens flocks around and picking up the floor eggs, nor the frequent health problems this work entails!

The Sputnik animation robot was born precisely to offer a solution to this problem.

Well-trained hens means fewer eggs on the floor and more in the nest



Machine Learning

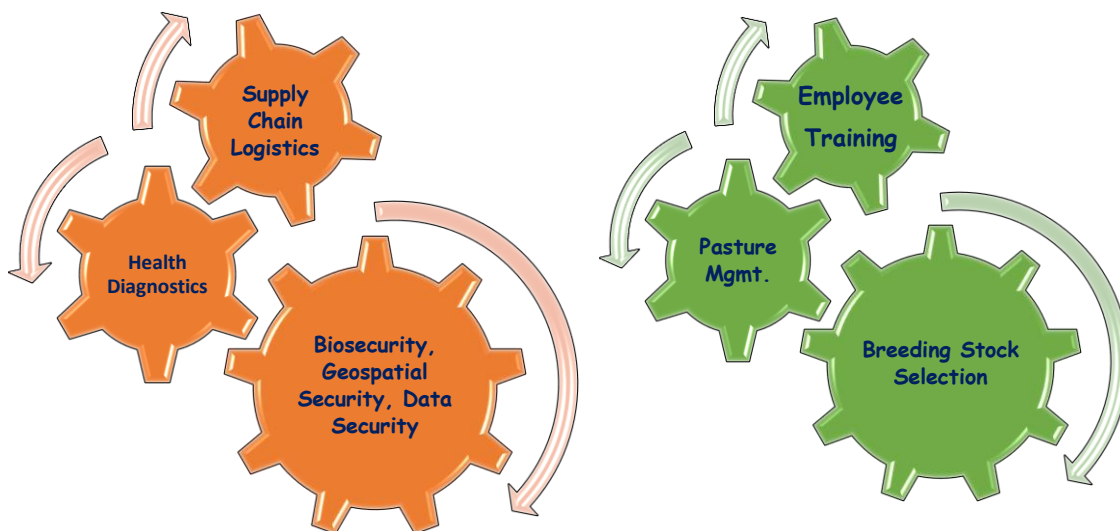
Prove you're not a robot

Mills, S08Z

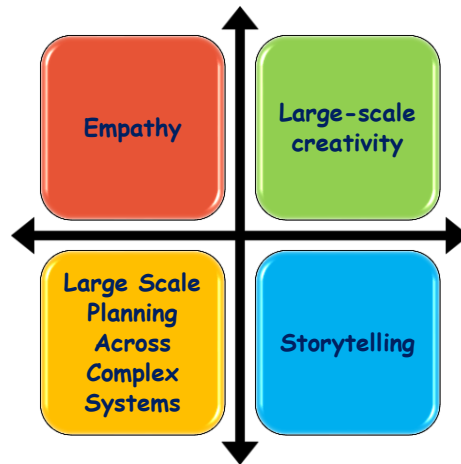
Type the two pieces of text:

Verify Cancel

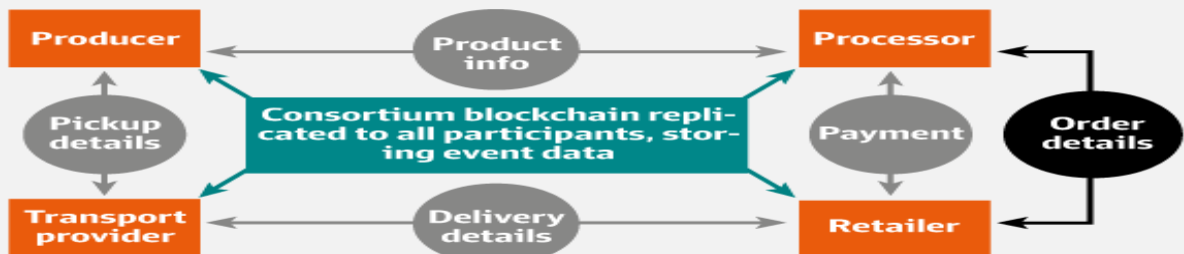
Machine Learning – Artificial Intelligence



What Machines Do VERY Poorly

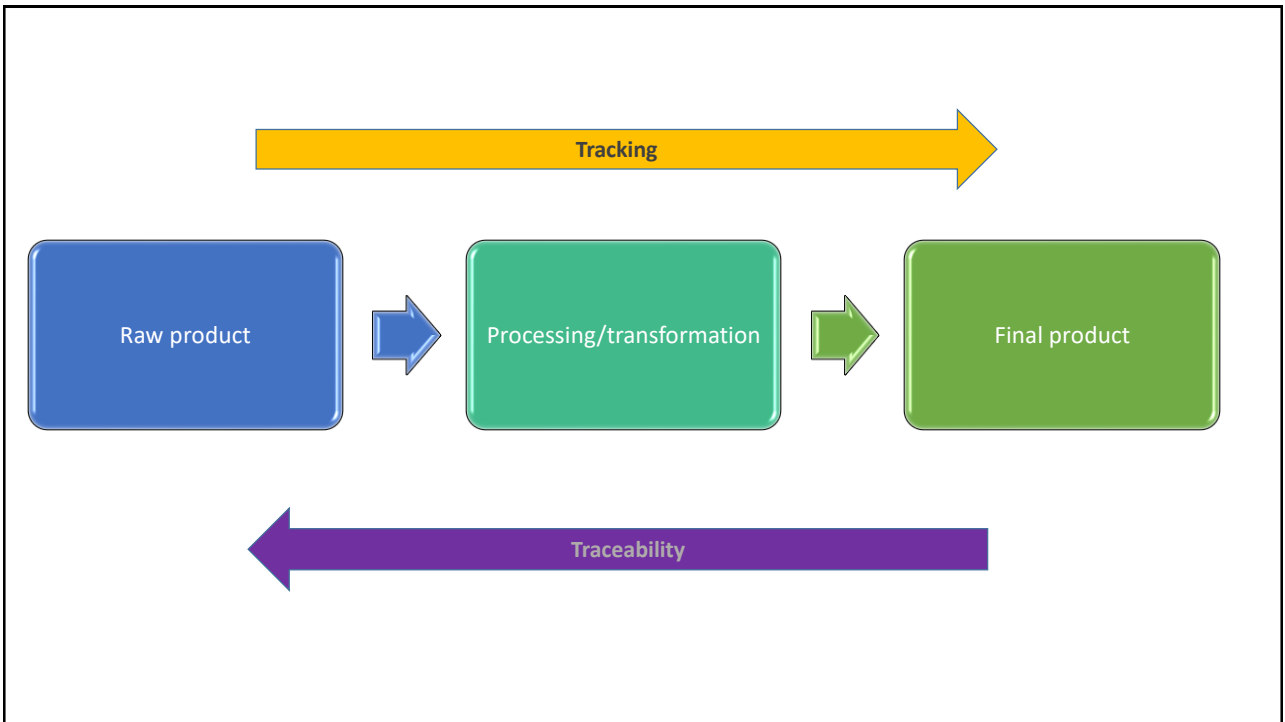


Supply chain via blockchain



SOURCE: DATA61, CSIRO



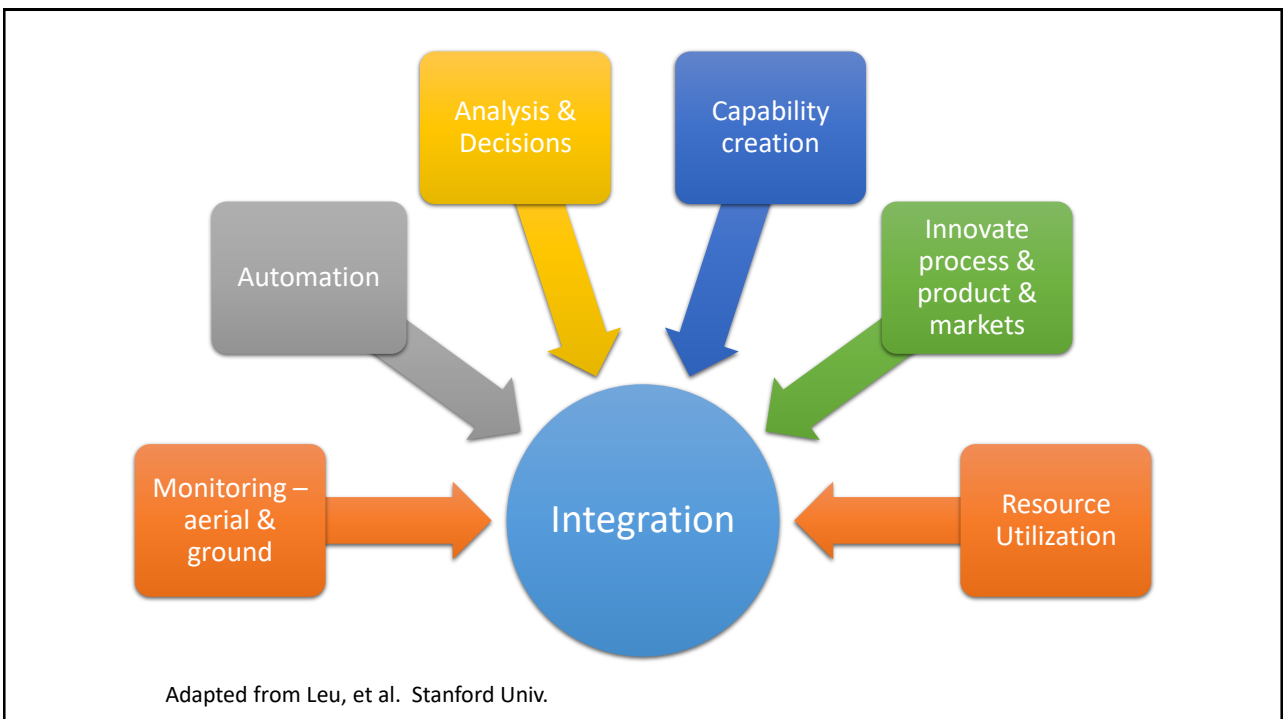


Traceability

- one step back, one step up
- what, where, & when
- disparate methods

Transparency

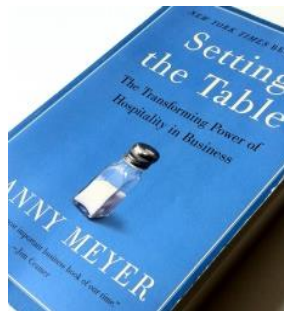
- entire, interconnected view
- what, where, & when
- how it's produced
- other attributes





“In the age of advancing Artificial Intelligence, humans’ advantage is diversity—twists and turns and acts of customer love and amazement that the algorithms can’t match!”

Tom Peters



PEOPLE
first



More like?



B



No silver bullets – no one size fits all solutions







Dr. Megan Rolf
Kansas State
University

Genome Editing And The CRISPR Revolution

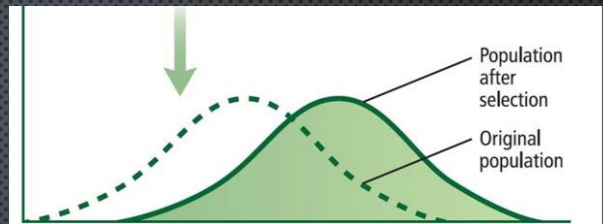


GENOME (GENE?) EDITING AND THE CRISPR REVOLUTION

DR. MEGAN ROLF

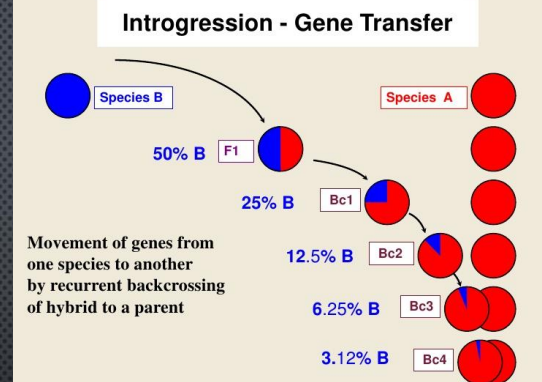
GENETIC MODIFICATIONS

- GENETIC SELECTION (NATURAL AND ARTIFICIAL WE ALL DO/SEE THIS)
- TRANSGENESIS
 - GENE FROM ONE SPECIES INTO ANOTHER
- CISGENESIS
 - GENES/ALLELES FROM SAME SPECIES INTO OTHER ANIMALS



WHY NOT DO IT NATURALLY?

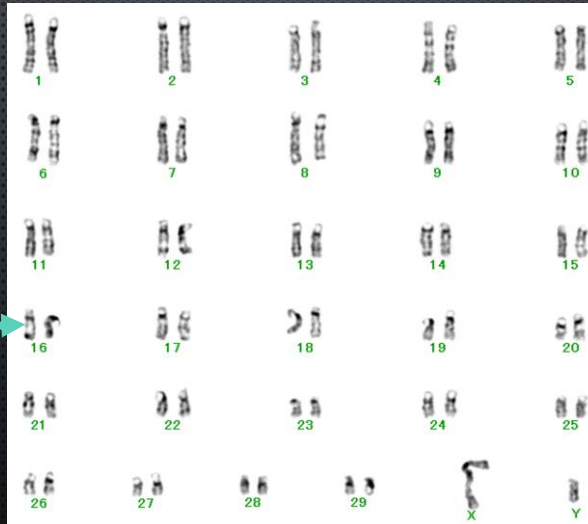
- ONLY WORKS FOR CISGENESIS
- DAIRY COW AS AN EXAMPLE:
 - HORNED
 - CAN INTROGRESS POLLED ALLELE FROM ANGUS OR POLLED DAIRY CATTLE
 - POLLED HOLSTEINS \$252/LACTATION CYCLE LESS THAN HORNED
 - >20 YRS OF BREEDING TO GET 50% POLLED ANIMALS (CARLSON ET AL. 2016, NATURE BIOTECHNOLOGY)
 - CAN ALSO LOSE FAVORABLE ALLELES FROM THE PARENTAL STRAINS THAT ARE SUBSEQUENTLY LOST
 - ENTER GENETIC MODIFICATION...



OLDER METHODOLOGIES

Knock out a gene
or
Insert foreign DNA

Must be placed
where it can be
expressed without
disrupting the cell
itself!

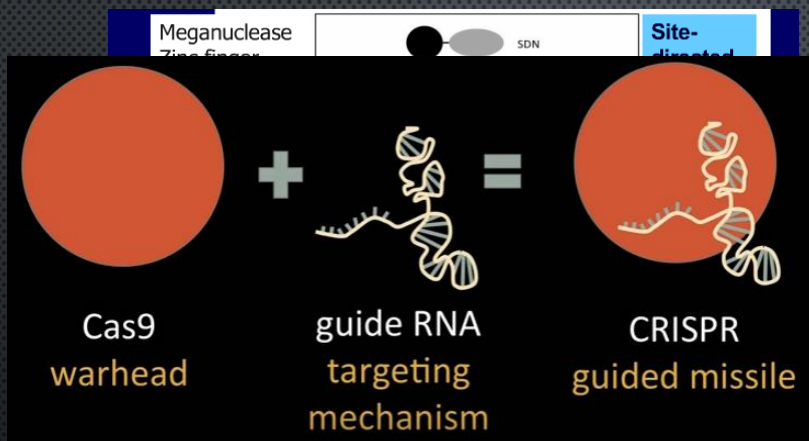


Gene/mutation
inserted randomly
into the genome

Can take
thousands of tries
to get it in the right
spot (expensive)

Leaves traces of
recombinant DNA

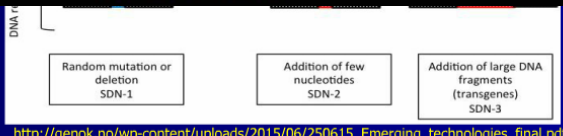
HOW GENOME EDITING WORKS



- WE CAN DIRECT THE INSERTIONS TO KNOCKOUT GENES OR TO INSERT SPECIFIC DESIRED SEQUENCES TO SPECIFIC LOCATIONS IN THE GENOME!
- NO TRACES OF RECOMBINANT DNA
- TYPICALLY THINK OF AS GENES FROM THE SAME SPECIES (CISGENESIS), BUT DOESN'T HAVE TO BE
- OFTEN CALLED PRECISION BREEDING

Could be foreign DNA

No foreign DNA



HOW "PRECISION BREEDING" HAS BEEN USED IN LIVESTOCK

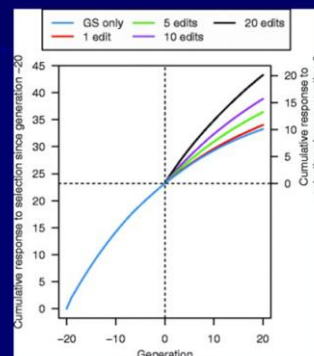


- PROOF OF CONCEPT
- CONSUMER ACCEPTANCE?
 - NATURAL VARIATION
 - WELFARE-RELATED TRAITS FOCUS

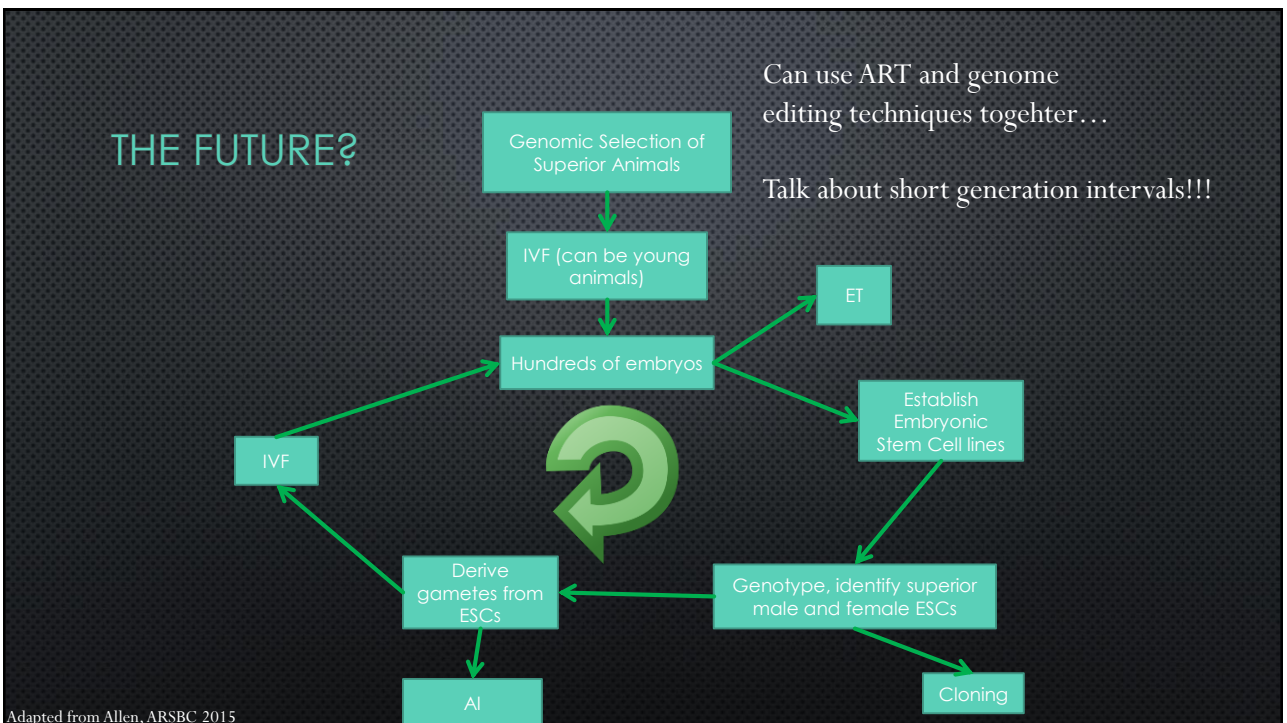
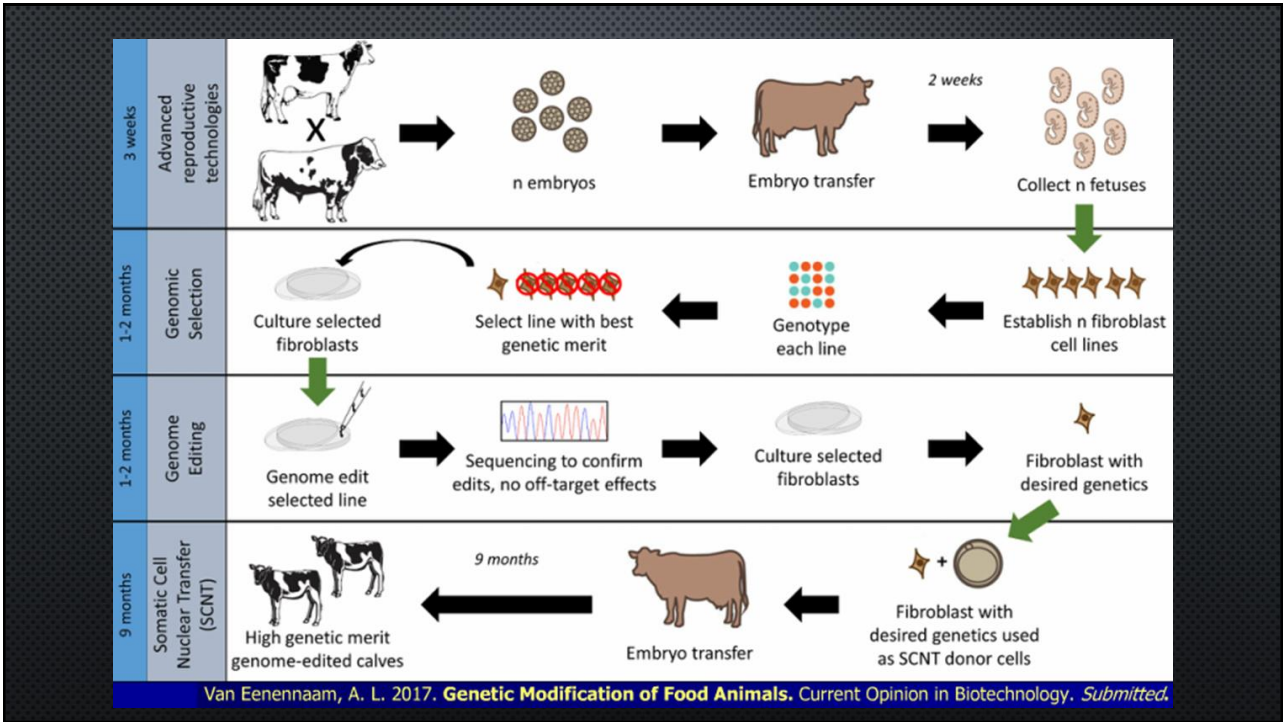
OBVIOUS TARGETS IN THE BEEF INDUSTRY

- CAN ACCELERATE CONVENTIONAL BREEDING:
 - POLLED
 - MYOSTATIN
 - RECESSIVE GENETIC ABNORMALITIES
 - TENDERNESS (CAPN AND CAST)
 - GROWTH HORMONE/RECEPTOR
 - MAYBE STEAROYL-COA DESATURASE (FATTY ACID COMPOSITION)
 - MAYBE DGAT
 - "SLICK" MUTATION (PRL/RECEPTOR)
 - ANY OTHER LARGE-EFFECT MUTATIONS OR MENDELIAN TRAITS

Accelerated rate of gain when promoting 1-20 genome large effect genome edits in genomic selection



Jenko, J. et al. 2015. Potential of promotion of alleles by genome editing to improve quantitative traits in livestock breeding programs. *Genetics Selection Evolution* 47: 1-14.



Adapted from Allen, ARSBC 2015

2 MAIN CHALLENGES

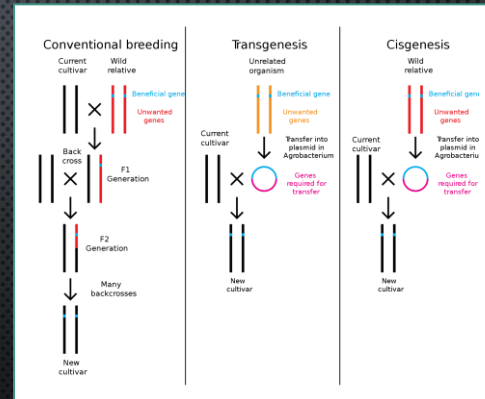
- CONSUMER ACCEPTANCE
 - CLEVER APPROACH!
- FDA APPROVAL GUIDELINES
 - DRAFT GUIDELINES STATE MODIFICATION = DRUG
 - WILL THIS STAY THE SAME IN THE FUTURE?



QUESTIONS?

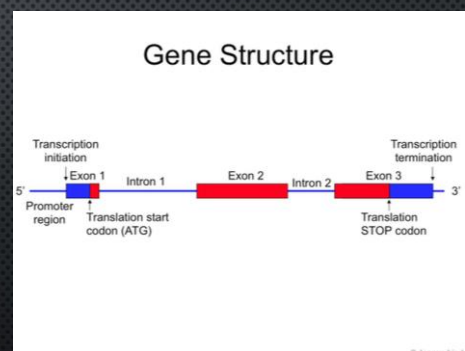
WHAT IS A REGULATED GMO?

- FDA SAYS (BASHSHUR, FEB 2013) THAT “**GENETICALLY ENGINEERED** OR **GENETICALLY MODIFIED ORGANISMS** (“**GMO**”S, OR “**GM FOODS**”) ARE **DEFINED** AS THOSE IN WHICH “THE GENETIC MATERIAL (“DNA”) HAS BEEN ALTERED IN SUCH A WAY THAT DOES NOT OCCUR NATURALLY.” AND SHOULD BE REGULATED
 - CONVENTIONAL BREEDING-NO
 - NATURALLY-OCCURRING HORIZONTAL GENE TRANSFER-???
 - NATURALLY-OCCURRING MUTATIONS-NO
 - INSERTION OF DNA FROM ANOTHER ORGANISM (TRANSGENESIS)-YES
 - INSERTION OF DNA FROM THE SAME SPECIES OR RELATIVE (CISGENESIS)-YES (AT LEAST FOR APPLICATIONS LIKE SALMON)
- PLANT AND ANIMAL REGULATION DIFFERENT
 - ANIMAL: FDA
 - PLANT: USDA AND THEN EPA (FDA ASSESSMENT OPTIONAL)

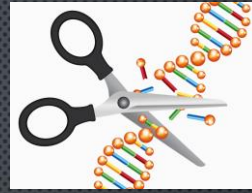


WHAT'S THE PROBLEM WITH IMPLEMENTATION OF GMO TECHNOLOGY

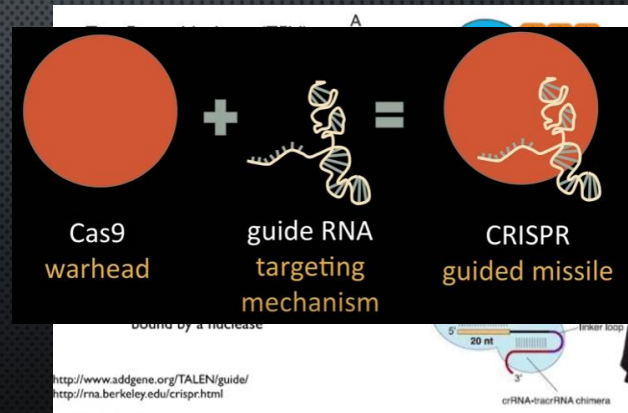
- RANDOM INCORPORATION OF GENES INTO THE GENOME
 - VERY VERY INEFFICIENT
 - NOT AS BIG A PROBLEM IN PLANTS, BUT BAD IN ANIMALS
 - CAN YOU JUST INCORPORATE A GENE ANYWHERE AND EXPECT IT TO MAKE A PROTEIN?
 - DISRUPT OTHER GENES
 - DISRUPT REGULATION OF OTHER GENES
 - GET SILENCED BY CELL MACHINERY



OVERVIEW OF GENOME EDITING



- DOUBLE-STRANDED BREAK AND ENGAGE NATURAL REPAIR PROCESSES TO MAKE AN EDIT WE WANT
- MOLECULAR SCISSORS
 - SPECIFIC AND TARGETED INSERTIONS, DELETIONS, AND SMALL MODIFICATIONS
 - SMALL PERCENTAGE OF OFF-TARGET EFFECTS
- DOESN'T WORK 100% OF THE TIME, BUT THE EFFICIENCY IS DRAMATICALLY IMPROVED
- OFTEN PRODUCES MOSAICS (NEED GERMLINE EDITS)



<https://vimeo.com/124545344>

Dr. Luis Mendonca
Kansas State
University

Data Analytics In
The Dairy
Business-DRINK-
Dairy Records
Intelligence
Network



Data Analytics in the Dairy Business



Dairy Records Intelligence Network

DRINK

Luís Mendonça, DVM, MS

Associate Professor, Dairy Extension Specialist

Department of Animal Sciences and Industry



Automation in the Dairy Industry



KANSAS STATE
UNIVERSITY

Automation in the Dairy Industry – Pen-Level



KANSAS STATE
UNIVERSITY

Automation in the Dairy Industry – Herd-Level



KANSAS STATE UNIVERSITY

Automation in the Dairy Industry – Herd-Level

Fully robotic rotary parlors gain U.S. momentum

17 Jul 2018



GEA's DairyProQ milking parlor is capable of milking up to 400 cows per hour with one operator.

The automated milking trend continues to tick upwards in the U.S. GEA introduced the first fully automated robotic rotary parlor, DairyProQ, and installations quickly gained momentum with two completed at the end of 2017 and beginning of 2018, and four on track for completion by end-of-year.

GEA GROUP AKTIENGESELLSCHAFT

Corporate Media and Press
Peter-Müller-Str. 12
40468 Düsseldorf
Germany

Tel: +49 211 9136-0

[REQUEST INFORMATION](#)

FIND OUT MORE

[MORE INFORMATION ON DAIRYPROQ](#)

[PRESS CONTACT](#)

[VISIT OUR MEDIA CENTER](#)

GEA's DairyProQ is available in configurations from 28-80 robotic stalls and can milk up to 400 cows per hour with just one operator. The four new DairyProQ robotic rotary parlors under construction in the U.S. this year include:

- Minnesota, 60-stalls for 2,000 cows starting up in June
- Colorado, 60-stalls for 2,200 cows starting up in July
- Texas, 80-stalls for 3,300 cows starting up in August
- California, 72-stalls for 2,800 cows starting up in December

<https://www.gea.com/en/news/trade-press/2018/robotic-rotary-parlors-gain-us-momentum.jsp>

KANSAS STATE UNIVERSITY

Automation in the Dairy Industry – Herd-Level

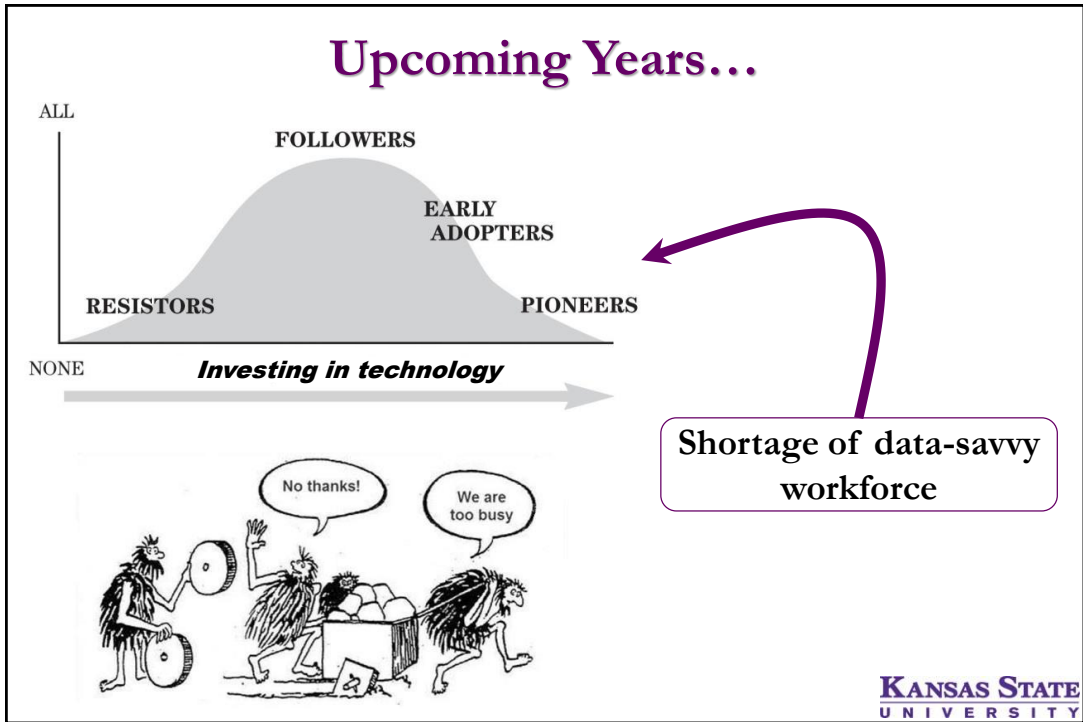
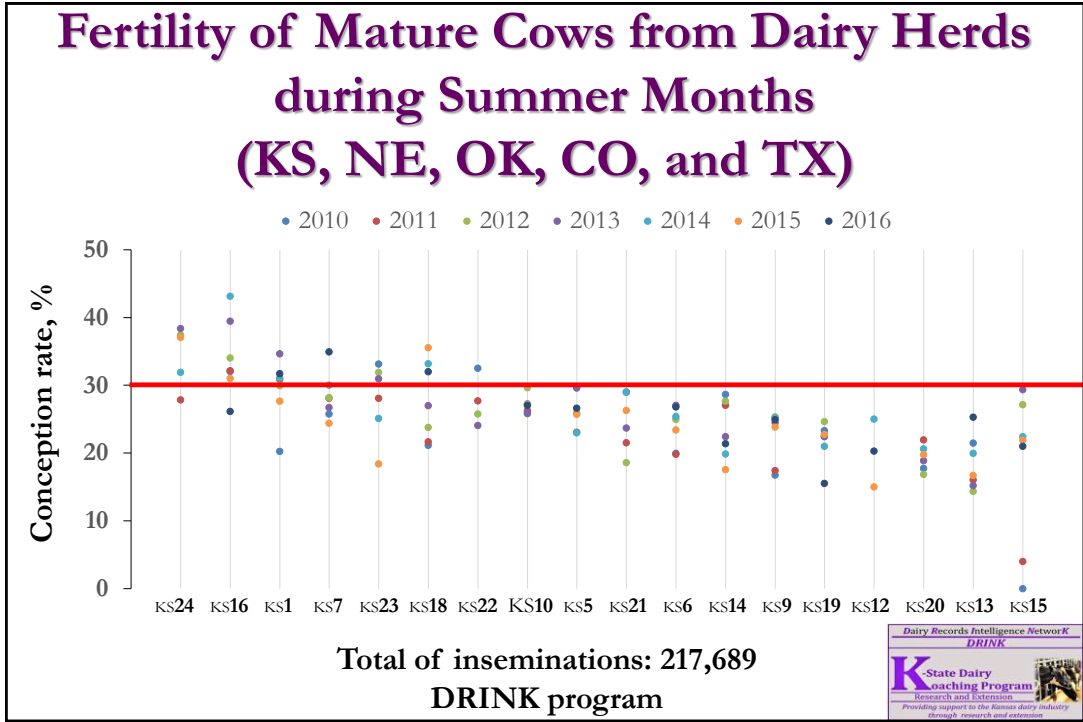


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DRINK – K-State Benchmarking Tool

drinkdairy.com

A screenshot of the DRINK Dairy Records Intelligence Network website. The page features a header with navigation links (HOME, REPORTS, ABOUT US, SPONSORS) and the title "DRINK Dairy Records Intelligence Network". Below the header is a large image of a cow in a field at sunset. The main content area includes a call to action: "Click here for REPORTS!", a logo for the Dairy Records Intelligence Network (DRINK), and the K-State Dairy Coaching Program logo. On the right side, there is a K-State Research and Extension logo and a statistic: "PARTICIPATING DAIRIES ACCOUNT FOR 107,000 COWS".



Thank you!



Luís Mendonça

mendonca@k-state.edu

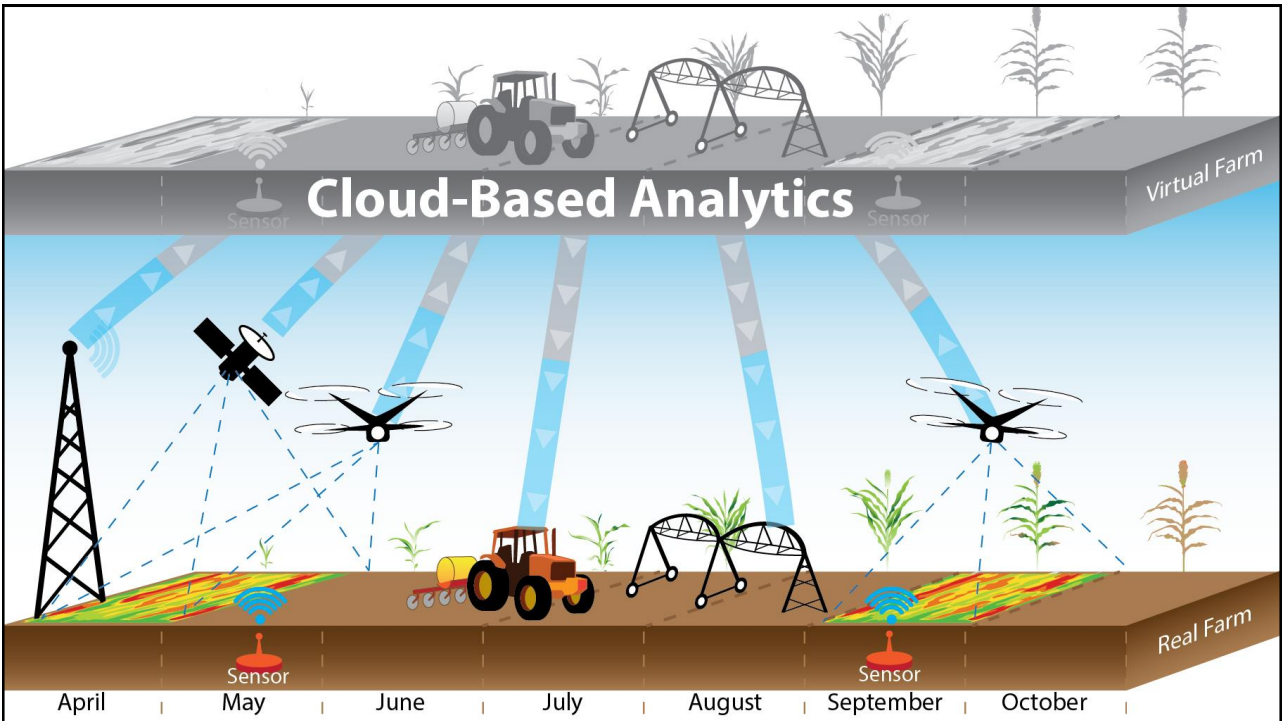
651-600-1532

drinkdairy.com



UAVS BRING PRECISION AG TO THE BEEF INDUSTRY

RAY ASEBEDO, PH.D.
TOPCON AGRICULTURE



ADDRESSING LIVESTOCK

- Majority of farms are diverse operations
- They have the expectation that drones can help
- We need to develop the foundational knowledge and methods to kick start the artificial intelligence of the drone for livestock

UAV USES IN CATTLE PRODUCTION

- Finding and counting cattle
- Identifying animal health and welfare problems
- Weight estimation



LOCATING, COUNTING AND IDENTIFYING CATTLE

Why important?

- Monitor cattle location
- Identify problem animals
- Monitor investments
- Time and financial savings
- Herd management



LOCATING AND COUNTING CATTLE

Previous systems:

RFID tags with drone based reader

- High power requirements
- Low height flights
- Long flight times
- Added expense in tags



<http://rfid24-7.com>

LOCATING AND COUNTING CATTLE

KSU system based on imagery and computer learning

- Higher faster flights
- Cover more ground per flight
- No added per animal expense



LOCATING AND COUNTING CATTLE

Methods being explored

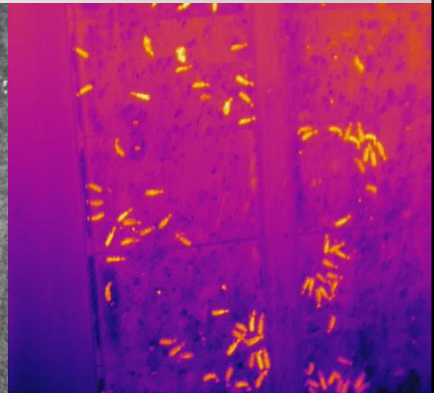
-High resolution RGB



-Multispectral



-Thermal



ANIMAL HEALTH AND WELFARE

- Looking for abnormal behavior
 - Cattle alone
 - Not coming to feed bunk
- Looking for illness
 - Fevers
 - Abnormal hide quality
 - Infectious diseases
 - Parasites
 - Mineral deficiencies
 - Malnutrition
 - Heat Stress



ANIMAL HEALTH AND WELFARE

Limitations of in thermography in production setting

- Dirt and Debris
- Temperature and humidity
- Wind
- Target distance
- Hair color and thickness

Current models have S.D. of + or – 0.46 Degrees Celsius

- Normal temperature to Febrile is 0.75 Degrees Celsius

ANIMAL HEALTH AND WELFARE

- Overcoming limitations
- Identifying anatomical features with high correlation to body temperature
 - Dorsal
 - Pastern (feet)
 - Forehead
 - Muzzle
 - Ocular region
 - Lacrimal region (tear duct)



ANIMAL HEALTH AND WELFARE

- Overcoming limitations
- Algorithm development
- Automatic target acquisition
 - Accounting for:
 - Weather conditions
 - Range
 - Animal color



ESTIMATING CATTLE WEIGHTS

3d models of cattle

- Management decisions
 - Feeding rates
 - Market timing
 - Breeding selection
- How
 - Stereoscopic
 - Lidar
 - Radar



Bonham show cattle



Lautner farms

UAV REGULATIONS

Part 107

- Operate UAV less 55 pounds
- Operation is visual line of sight with out aid
- Day light hours 30 min before SR and 30min after SS with anti-collision lighting
- Max height 400' agl max
- Speed 100mph
- Can operate in class G airspace B,C,D and E with ATC approval
- No operations over non-involved pedestrians

SUAS REGULATIONS

Part 107 – Pilot certification

Each operation must have a pilot that has a remote pilot airman certificate

- At least 16 years old
- Pass a FAA test

SUAS REGULATIONS

Part 107

- UAS certification
 - UAS from 0.5 pounds to 55lbs must be registered
 - RPIC must certify that aircraft is airworthy
- Refer to FAA Website
 - https://www.faa.gov/news/fact_sheets/news_story.cfm?newsId=20516

SELECTING A PLATFORM



FIXED WING OR MULTIROTOR

- **Fixed Wing**
 - Longer Endurance
 - > 45 minutes
 - Cover large areas
 - > 160 acre fields
 - Requires clear landing area
 - Risk of damage during landing
- **MultiRotor**
 - Shorter Endurance
 - 20 – 40 minutes
 - Vertical take off and landing (VTOL)
 - Shorter setup time
 - Typically fine for fields < 160 acre
 - Easy to have multisensor integration

TYPE OF MULTIROTOR?

- **Quad**
 - More efficient, > Endurance
 - No Redundancy
 - Motor goes out.... Hope your camera survives
 - Easy to setup and operate
 - Maintenance is cheap
 - Smaller form factor
- **Hex**
 - Motor Redundancy
 - A motor or ESC goes out, you may stay airborne
 - Typically less endurance than a quad
 - Greater payload capacity



TYPE OF MULTIROTOR?

- **OctoCopter**
 - Excellent Motor Redundancy
 - Loose a motor or two and you are still ok
 - High Payload capacity
 - Lower Efficiency
 - Typically used for very heavy cameras
 - High maintenance costs
 - Get very large, transport more difficult
- **X8 – CoAxial**
 - Form factor similar to Quad
 - Greater payload than quad or hex but less than octo arrangement
 - Coaxial arrangement results in efficiency reductions
 - Lower endurance
 - Motor redundancy





TOPCON DRONE SOLUTIONS



Mr. John Butler
Beef Marketing Group

A Vision of the Beef Industry in 2030

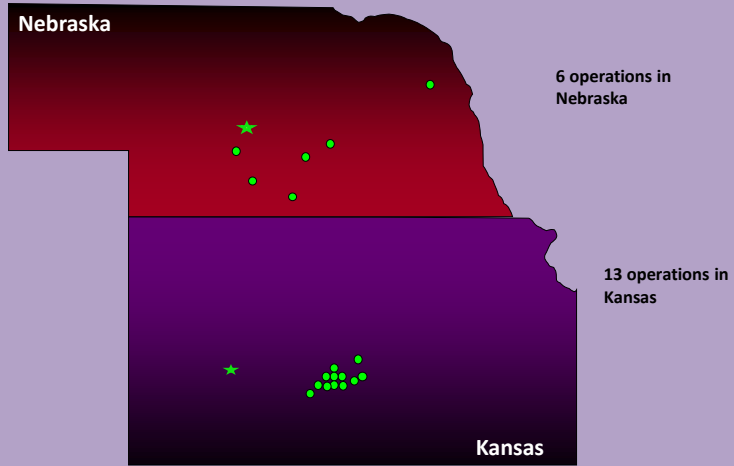
A photograph of a cowboy in a dark hat and jacket riding a dark horse through a herd of cattle. The scene is hazy, suggesting dust or mist. The cowboy is seen from behind, looking out over the herd.

**K-State
Ranching Summit**
"A vision of the beef Industry in 2030"

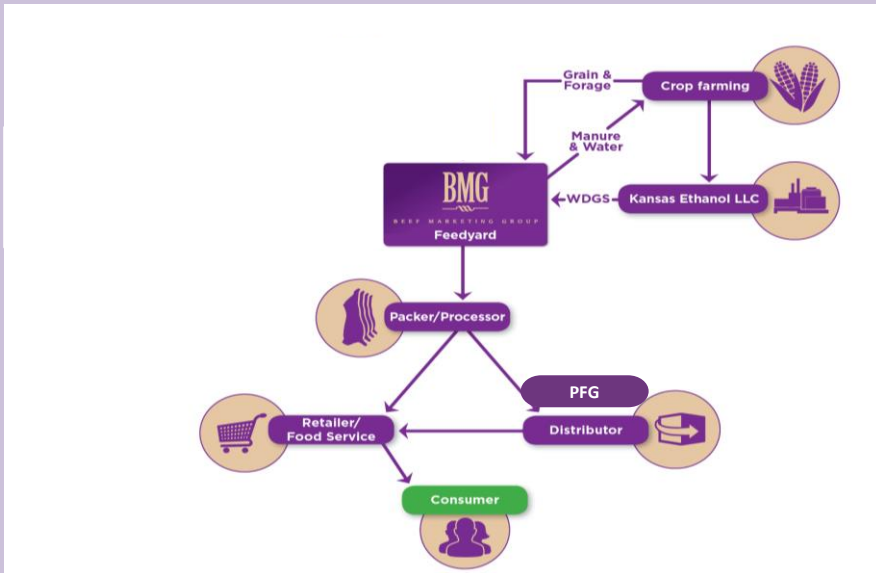
August 15th, 2018

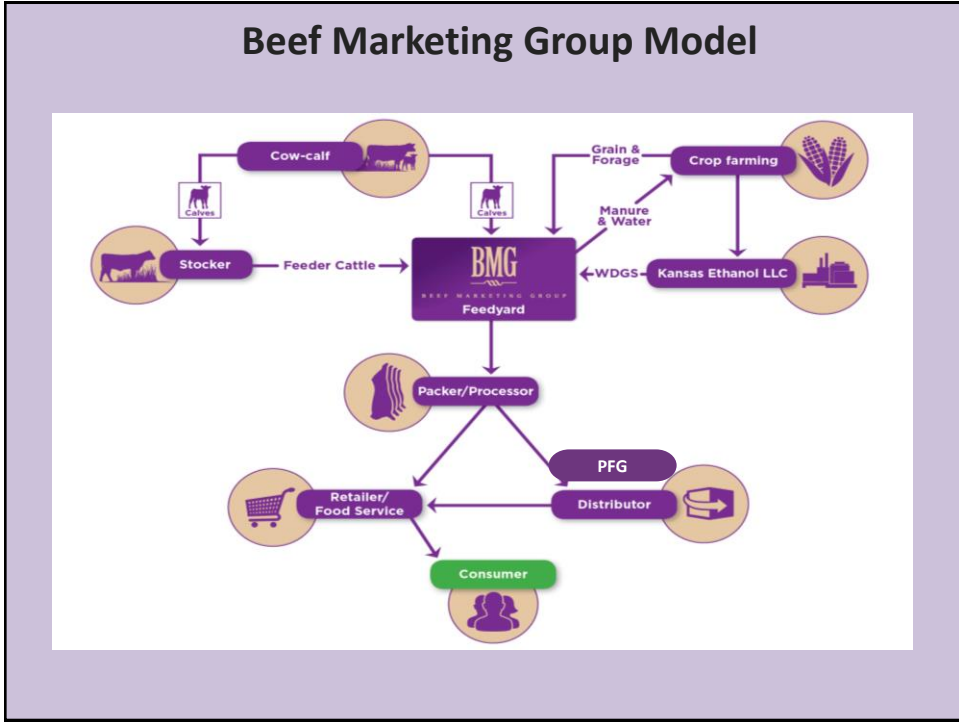
John Butler, Beef Marketing Group

BMG Feedyard Locations



Beef Marketing Group Model





SKATE TO WHERE THE PUCK IS GOING TO BE

Plant Based Protein
"Clean Meat"

Blockchain

Robotics

Traceability

Alignment Transparency Sustainability

BEEF INDUSTRY LONG RANGE PLAN

Vision

To responsibly produce the most trusted and preferred protein in the world.

Mission

A beef community dedicated to growing beef demand by producing and marketing the safest, healthiest, most delicious beef that satisfies the desires of an increasing global population while responsibly managing our livestock and natural resources.



Value Chain Alignment



A Vision of the Beef Industry 2030

A Changing Market, a Changing Consumer, A Changing Society



More People, More Money

- **7.6 Billion people today....9.6 people in 2050**
- **US 326 million 2017.....400 million 2050 (20-25% increase!)**
- **Middle class will increase from 3.2 billion to 5.2 billion by 2030 Globally**



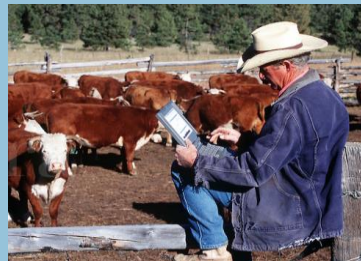
Who are they and what will they expect?

- Millennials (1981-1996) 2.3 billion. They are moving into their prime spending years.



How do farmers and ranchers raise our food?

- Everything on computer devices. Information readily available on line
Facebook, Pinterest, twitter.



- They are looking online for what their fellow consumers are saying then look elsewhere to see if the information is scientifically sound.

A gap continues to grow...

What the beef industry knows and what the consumer perceives.

- In 2017 55% believe farm animals are treated humanely
- Down from 61% a year earlier...



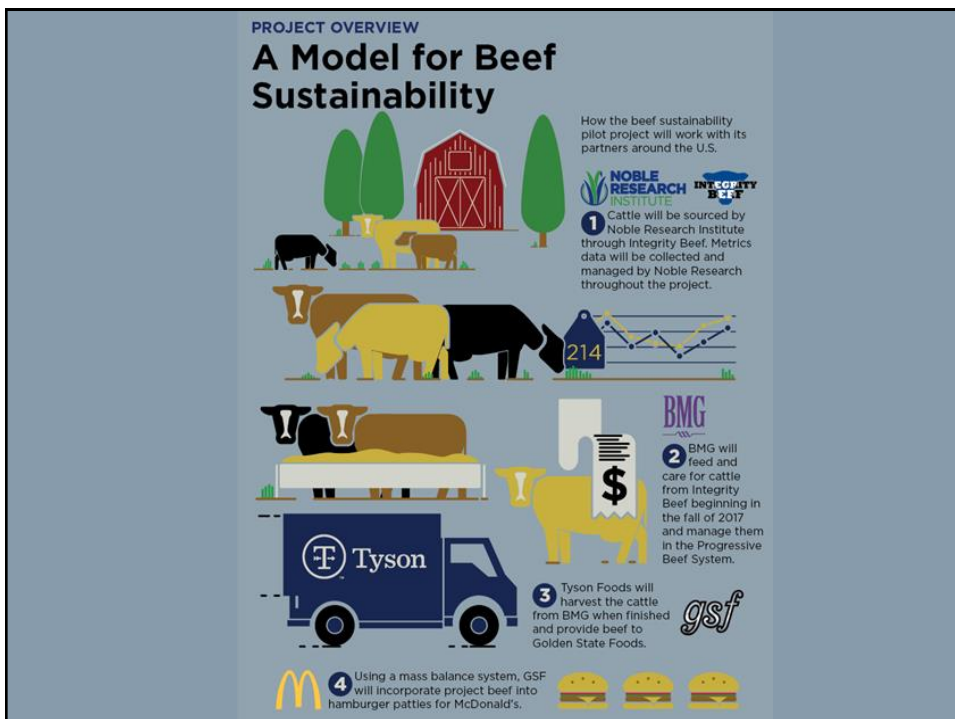
Transparency


- Will take on a whole new meaning as we move ahead. "A brand is no longer what you tell the customer, it is what the customers tell each other"
- Society is increasingly skeptical..... A story will not be enough. We are going to be required to provide proof it is real.....a step beyond transparency.




Value Opportunity


- Midan marketing research tells us that 86% of Millennial moms will pay more for food with full Transparency.
- Expectations include,
 - Minimally processed
 - GMO free
 - Was the worker treated fairly?
 - Was the animal treated humanely?
 - Environmental sensitivity?
 - Is it ethically sourced?








The Alliance - Agents of Change















Our members have helped lead the modern evolution of beef production that has resulted in increased productivity, quality and improved animal welfare, while decreasing our environmental impact and making American beef the protein of choice around the world.

The next evolution of our industry involves enhanced animal stewardship through the responsible use of technologies, including antibiotics and more transparent communication with consumers.

Alliance Members Represent

25-30%



U.S. Cattle On Feed

Modern Beef Production vs. 30 Years Ago

13%
MORE BEEF





13%
FEWER ANIMALS

30%
LESS LAND



20%
LESS FEED



Our Five Commitment Pillars



100% 3rd Party Verification

Refine
Reduce
Replace



Judicious Use,
Continuous Improvement &
Research

Enhanced
Veterinary Oversight
& Training



Refine
Reduce

Replace
Reduce



Documented
Animal Welfare
Program

25

Therapy Tracking
& Animal
Traceability

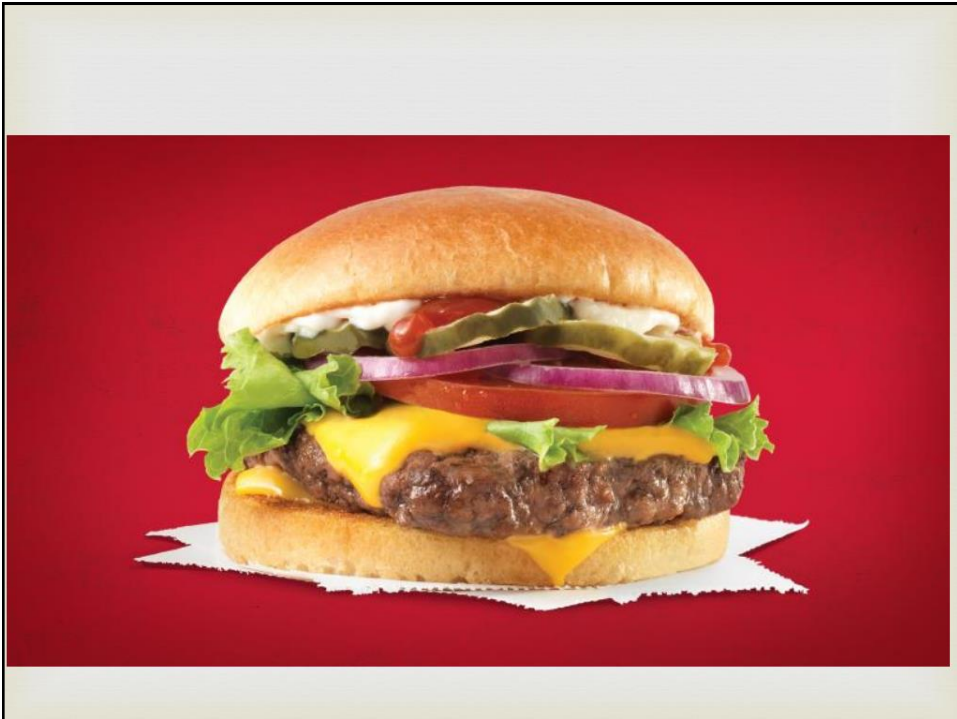
Replace
Reduce




Responsibly



Our Approach to Responsible Abx Use in Beef





Antibiotics &
ANIMAL
Welfare

At Wendy's, we have an opportunity and a desire to care for our customers and employees while also promoting the health and welfare of the animals that provide our food.

Our goal is to work with our supply partners to refine, reduce, and replace antibiotic therapy through their judicious use and by exploring animal management practices that do not rely on medically important antibiotics to increase production yields.

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Thank you
Questions?