Mega Trends in Food & Agribusiness

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Global agribusiness is entering a critical phase
Feeding 9 Billion?

Improving yields through new varieties and protection from pests and disease
Fighting poor nutrition & improving lives

Sustainable livelihoods and stronger communities
Preserving Soil

In less than 40 years, it’s estimated that half of the current land we use to grow crops will become unusable due to desertification and land degradation.

This loss of soil productivity and plant cover is primarily caused by unsustainable agricultural practices.
Healthier Diets

Higher nutritional value - higher levels of essential nutrients such as vitamin A, iron and zinc.

More fruits and vegetables – yield loss prevented by fungicides

Healthier staples – corn containing built-in protection from insect damage, lowering the levels of mycotoxins
World food wastage

About 1/3 of the food produced in the world for human consumption every year gets lost or wasted.

- **Cereals**: 36.8% of 780,680,000t
- **Fruits & vegetables**: 58.1% of 851,947,000t
- **Milk**: 18.4% of 62,813,000t
- **Meat**: 23.4% of 54,720,000t
- **Fish & Seafood**: 40.4% of 124,680,000t

Source: FAO (2007 data)
Reducing water needs..

- Water efficient crops
- Conservation tillage, leave more moisture in the soil
- Drought tolerant crops
Food Safety

Chocolate maker Mars has ordered a recall of chocolate products in 55 countries.
Global Viruses
Chinese Tote Bags Thought to Have Brought PEDv to US

An investigation by the USDA has found that Porcine Epidemic Diarrhoea (PED) may have entered the US through reusable containers used to transport bulk material, such as feed or pet food, from China.
Food Safety is a Given

As a supplier of staple diet food it is of paramount importance that the food we provide is:

SAFE  TASTY  NUTRITIOUS  SUCCULENT  VALUE FOR MONEY
New methods of distribution:

Amazon selling fresh and frozen Morrisons food?
What started in the EU has as many recognized the threat of antibiotic-resistance has spread to regulations in over 46 countries.

Non-therapeutic antibiotics have been banned in many countries (specifically those used in human medicine)
Reduce:

World Debate on Sugar
“For the first time in human history, the number of overweight people rivals the number of underweight people.... While the world’s underfed population has declined slightly since 1980 to 1.1 billion, the number of overweight people has surged to 1.1 billion.”
Each year, the world’s farmers must feed 80 million additional people.

The world's population has nearly doubled since 1970 and is headed toward 9 billion by 2050.
Introducing GLIMPSE

GLIMPSE Framework

- Infrastructure & Investments
- Consumer Markets
- People
- Food Losses
- Science & Innovation
- Government & Policies
- Environment
Keywords tend to be predominant in word clouds

Word Cloud

[07/10/2012 to 07/09/2015; sample of 10,000 posts]
Most words relate to some category within GLIMPSE

**Word Cloud (without Keywords)**

[07/10/2012 to 07/09/2015; sample of 10,000 posts]
Excluding keywords to identify word-related challenges

Word Cloud (without Keywords)

[07/10/2012 to 07/09/2015; sample of 10,000 posts]
The Retail Environment In 2050?

7%

Stores replaced with virtual online shopping?
“prosumer” has transformed from meaning “professional consumer” to meaning “product and brand advocate.”

Rather than simply “consuming” products, people are becoming the voices of those products and significantly impacting the success or failure of companies, products, and brands, particularly through their involvement on the social web.
Businesses no longer in control

.. Its consumers

Prosumers are online influencers that business leaders and marketers must not just identify but also acknowledge, respect and develop relationships with in order for their products and brands to thrive.

The leaders of this shift use social web to spread messages, influence people around the world, and change demand.
The 8 criteria to Future-Proof your Business

• Sourcing
• Food Safety
• Health & Nutrition
• New technology
• Production
• Labor
• Climate change
• Sustainability
Are you sourcing the right inputs?
Are you sourcing the right inputs?

Issues to consider:

1. Consistency
2. Supplier relationships
3. Quality of raw goods
4. Fluctuating prices
Are you sourcing the right inputs?

5. Properly labeling
6. Filler/substitute products
7. Transportation/fuel prices
8. Transparency
9. Country of origin/black market
Are you preparing for real or perceived food safety issues?
Are you preparing for real or perceived food safety issues?

Issues to consider:

1. Harmful bacteria (ex. *E. coli*)

2. Chemical contaminants
   - Ammonium hydroxide
   - Melamine

3. Livestock diseases (ex. mad cow)

4. Other harmful contaminants
   - Mercury
   - Pesticides

5. Honest information
Are you preparing for real or perceived food safety issues?

6. Public relations
7. Milk sourcing
8. GMOs
9. Refrigeration
10. Cloned organisms
11. Other unfounded food safety concerns to the public
Are you producing a nutritionally healthy product?
Are you producing a nutritionally healthy product?

Issues to consider:

1. General healthfulness
2. Sodium content
3. Caloric content
4. Fat content
5. Saturated fat content
6. Cardiovascular-related concerns
7. Obesity concerns
Are you successfully and safely integrating new technology?
Are you successfully and safely integrating new technology?

Issues to consider:

1. Introducing new technologies
2. Automation
3. Payment systems
4. Cyber security
   • Company
   • Customer
Have you prepared to show your customers how their food is produced?
Issues to consider:

1. Social Media
   - Negative publicity

2. Customer misinformation

3. Adverse publicity

4. Designated public relations

5. Animal welfare groups

6. Are there parts of your business you would not want the consumer to see?
What are your plans for your employees?
What are your plans for your employees?

Issues to consider:

1. Workplace safety
   • Employee injury

2. Upper management retention

3. Key employees

4. Succession plan

5. Artificial intelligence

6. Child/forced labor
Are you prepared to deal with climate change?

Issues to consider:

1. Weather affecting supply chain
2. Climate shift
3. Seasonal consumption patterns
4. Soil quality
5. Soil erosion
Is your business sustainable?
Is your business sustainable?

Issues to consider:

1. CO2 emissions
   - Company production
   - Supply chain

2. Reduction in greenhouse gases

3. Sustainability
   - Production
   - Packaging

4. Waste

5. Energy efficiency
1. Does the weather play a role in your supply chain?

2. Do you have concerns regarding Climate Shift?

3. Do you have concerns regarding seasonal consumption patterns?

4. Do you have concerns regarding soil quality?

5. Do you have concerns regarding soil erosion?

Are you prepared to deal with climate change?
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These 8 criteria can be distilled down to 3:

1. Websites are not insights
2. Customer demands continues to change, but will coalesce in the future
3. Today’s expectations will become tomorrow’s minimum standards
Do supermarkets have a future?

“Supermarkets will still physically exist in 2050, but they will be transformed into places where people will go not only go to shop, but also to meet other people and find relevant information about the high-quality products they’re looking for.”

-Gabriele Tubertini, CIO of Coop Italia
Mobile Internet
So what are you to do?
BREAKTHROUGH GOALS require disruptive solutions
11,000 yrs ago: Sheep & Goats were domesticated in Mesopotamia

9000 yrs ago: Cattle domesticated in modern Turkey & Pakistan

8 founder crops: Emmer, Einkorn Wheat, Hulled Barley, Peas, Lentils, Bitter Vetch, Chick Peas & Flax

10,000 yrs ago: Chickens, South East Asia Followed by Horses & Oxen
Farming is the basis of modern life..

• Supported 1st villages, towns, cities & civilizations
• Art, philosophy, thinking, invention
• Every human development from Innovation to Technology has been a function of our ability to farm.
& innovation is accelerating, accelerating, accelerating.
Who has already been disrupted?

World’s largest taxi company, but owns no taxis

Largest accommodation provider, but owns no real estate

World’s most valuable retailer has no inventory

Most popular media owner creates no content

Fastest growing banks have no actual money

World’s largest movie house owns no cinemas

Largest software vendors don’t write the apps

Largest communication companies own no infrastructure
Telematics connects the farm firm

Figure 16. Telematics connects the farm firm

Beyond Precision Ag; Source: Steve Sonka
Disruptive Digital Technologies
... with the power to transform Agriculture
Digital livestock – what does it mean?

A farm that is information enabled
searchable / query-able real time data flows accessed from a smart device
Vertical gardening is already a reality, how soon a Vertical Farm?
My Own Story
I’ve seen the world with 28 years
And it is great
Opportunity to see the world

- Currently President of Agritech Capital.
- CEO of Cainthuhs.
- Professional Affiliations and Memberships with the IFIF, NTF, NCC, EAAP, AFIA, ASAS, BPS & IMI
- Refereed publications
- Affiliations with Harvard University, Perdue Institute, MIT, Kentucky University, Michael Smurfit Graduate Business School
A world of opportunities starting here
My Journey has taken me around the world
Where will 2019 take you?
THANK YOU