



A FARM ILLINOIS FOREFRONT SERIES REPORT

AT THE FOREFRONT: Propelling the Agri-Food Data Revolution

Data is reshaping every aspect of the agri-food value chain. Value chains, however, are traditionally linear with a discrete order of progression – input, produce, source, make, deliver, consume. To maximize the potential of data in the agri-food landscape, we must enable frictionless, transparent, and effective movement of data from farm to fork. With world-class assets in the tech, food, and agriculture sectors, Illinois is poised to be a global leader in this transformation.

On April 3, 2018, FARM Illinois brought together 50 stakeholders from across the value chain to discuss the challenges and opportunities to make this new world of data useful, useable, and robust for the state’s agri-food sector. The following insights were gleaned during a half-day Forefront Series event.

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Data is a valuable raw material that creates new intelligence: data provides information, information yields insight, and insight enables greater intelligence. This intelligence has the potential to bring numerous benefits to the agri-food value chain, including:

1. Enhanced decision-making, risk management, and long-term planning;
2. More efficient practices, operations, and logistics;
3. Improved product quality and safety; and
4. Greater consumer-facing transparency on a variety of measures, including sourcing and environmental impacts.

In addition to benefits for individual stakeholders, data integration could contribute to the overall health of an interconnected value chain ecosystem. However, fragmentation and underutilization have kept Illinois' agri-food sector from reaping the full benefits of new data capabilities.

A number of factors need to be addressed to overcome these barriers:

1. *Adoption*: Empowering stakeholders to adopt data-enabling technologies.
2. *Relevance*: Collecting data that is valuable and filtering out that which is not.
3. *Trust*: Ensuring data is collected, transferred, and transformed reliably.
4. *Utility*: Developing tools for interpreting and leveraging data.
5. *Aggregation*: Storing and managing large amounts of data from different sources.
6. *Ownership*: Defining who holds the rights to data and how they are compensated for it.
7. *Security*: Ensuring that data is securely stored and transferred.
8. *Integration*: Working across silos, companies, and sectors to leverage data.
9. *Value*: Defining data's monetary value and shifting business models accordingly.

Key Insights

1. *The future is here; innovate or lose.*
The intelligence that comes from data is already empowering the agri-food value chain to improve risk management and consumer responsiveness. Because "smart" is becoming the new normal, stakeholders must be connected and equipped with relevant technologies in order to remain competitive. Stakeholders slow to adopt are at risk of falling behind or becoming obsolete altogether.
2. *Infrastructure is crucial to accessing, transmitting and storing data.*
As data technologies continue to emerge as powerful business tools, physical connectivity will be key to leveraging data's potential to produce greater value. Expanding broadband access can empower more stakeholders, especially rurally isolated farmers and agri-food businesses, to connect to others and increase the intelligence of their operations. Integrating different data sources is also a challenge. Enhanced back-ends solutions will be important to ensure data is able to flow seamlessly.
3. *Data is the currency of the 21st century.*
Much like a currency, transfers of data between stakeholders are creating new markets and forms of value. As data transactions become more important, they must have indicators of value, security and fraud protection, and frictionless transfer between entities at high volume and velocity. These innovations could enable the emergence of new business models that create value from data.

4. *Trust is the glue and the grease for data integration.*
Collaboration among value chain stakeholders is key to effectively aggregating, analyzing, and leveraging data for maximum impact. Without clarifying data ownership and establishing trust between these entities, whether through legal contracts or more informal frameworks, innovation efforts may fragment and grind to a halt.
5. *A user-center approach is needed to determine data relevance and ownership.*
Surplus data can make it difficult to determine what is valuable and what is not. Rather than collecting and analyzing data for its own sake, stakeholders across the value chain must engage with one another to determine what is relevant for specific use cases. This approach can also facilitate decisions about ownership and compensation, as stakeholders come to mutually beneficial arrangements for data sharing and aggregation.
6. *People and process, not technology, are the primary barriers.*
While tools for collecting and analyzing data can be expensive to develop and deploy, much of it is already available and prices are falling. Human barriers, ranging from technology adoption to trust and ownership issues, are far more difficult to overcome. Effectively addressing these elements will require a multidisciplinary process, drawing on the full value chain as well as various fields of expertise including behavioral economics, psychology, law, and design.
7. *Illinois has the opportunity to move from participation to leadership.*
Although agri-food companies see Illinois as an important hub for data-chain innovation efforts, the state is regarded as a secondary participant versus a primary leader. Illinois' strong technology and research assets, along with its world-class agri-food sector, make the data revolution an opportunity to move from participation to leadership.
8. *It's time to move from discussion to collaborative action.*
Working on a collaborative, data-focused project could be an effective way to build the capacity and trusted relationships necessary to integrate data across the value chain. It can also surface issues and lessons that may not be apparent outside of a real-world context.

Next Steps for Illinois

The impact of data in the agri-food system is alluring, but challenges need to be addressed to increase integration across the value chain. Although some issues are technical in nature, there is opportunity to improve the people and process components to ensuring data is useful, useable, and robust. Based on the insights gained during the Forefront Series event, the following areas emerged as viable next steps to advance this work in Illinois:

1. Create an open platform to encourage greater cross-sector collaboration that will accelerate solution development and innovation for the full agri-food value chain.
2. Identify specific use cases that could serve as data integration pilots and promote Illinois' efforts.
3. Explore cultural factors that drive behavior on the consumer end of the value chain.
4. Engage wider perspectives inclusive of the full agri-food value chain and stakeholders active in the collection, storage, transferring, transforming, and marketing of data.
5. Research how other sectors have pursued effective cross-organization data integration.

At the Forefront

The FARM Illinois Forefront Series provides a platform for interested stakeholders to engage in vibrant dialogue around global issues of emerging interest in the food and agriculture landscape. During half-day events, members have an opportunity to establish new connections, share knowledge, identify best practices, and develop collaborative opportunities that will result in systemic change.

Through a facilitated process, perspectives are shared on key drivers, challenges, trends, and emergent issues through presentations from distinguished presenters as well as interactive discussion amongst participants. Conversations occur among small groups and telescope to the broader group. Key features of FARM Illinois Forefront Series events include:

- Gathering of a select group of stakeholders to engage in vibrant participatory dialogue around a critical emerging global issue in the food and agriculture landscape.
- Holistic review and context setting from expert presenters spanning the value chain on the influence of the topical issue in their line of work.
- Identification of emerging trends and drivers using insight from personal and professional experiences.
- Introduction and definition of a collective agenda for achieving future progress.
- Diversity of perspectives from production, distribution, and processing through and beyond consumption, with both local and global focus.
- Professional networking with a unique and diverse set of experts and leaders spanning the entire food and agriculture value chain.

Participating Stakeholders

Featured Presenters

Mark Beckmann
 Director, Manufacturing Industry
 Solutions, *Microsoft*

Rob Dongoski
 Partner & Global Agribusiness
 Lead, *Ernst & Young LLP*

Kyle Dooley
 Data Strategy & Analytics, *CNH
 Industrial*

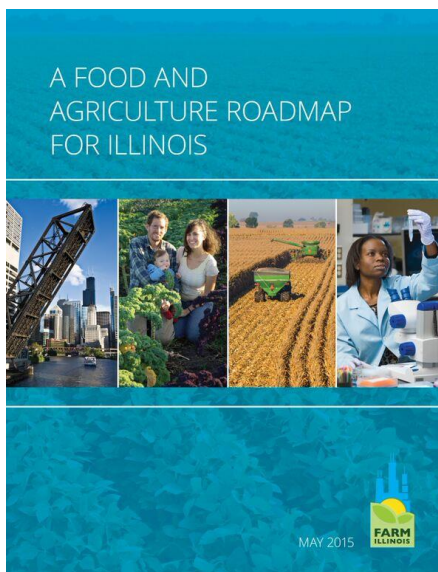
Participating Entities

AGR Partners
 Aker AG
 City of Chicago
 Clareo
 Climate Corporation
 CME Group
 CNH Industrial
 Compeer Financial
 Cultivian Sandbox Ventures
 Ernst & Young LLP
 FarmLogix
 First Midwest Bank

Foresight Design Initiative
 Global Philanthropy Partnership
 Illinois Agricultural Leadership Foundation
 Illinois Autonomous Vehicle Association
 Illinois Farm Bureau
 Illinois Soybean Association
 Integrated Bioprocessing Research Lab
 Kinship Foundation
 Mars Wrigley Confectionery
 McDermott Will & Emery LLP
 McKinsey & Company
 Microsoft

Nufarm Americas
 TechNexus Venture Collaborative
 The Chicago Community Trust
 The Development Consortium
 Tyto Inc.
 United States Army
 UI LABS
 University of Illinois
 Uptake Inc.
 Wyffels Hybrids

FARM Illinois



The FARM Illinois RoadMap, released in May 2015, brought together over 150 leading stakeholders to develop a plan to support Illinois' future stake in food and agriculture. The plan outlined six key priority areas and 23 actionable recommendations.

FOR MORE INFORMATION

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Mission Statement

The mission of FARM Illinois is to position Illinois as the global leader in food and agriculture system innovation by convening and connecting stakeholders to catalyze and champion actions that will grow the economy, support community health, and sustain the environment.

About

FARM Illinois is an independent, multi-stakeholder initiative working to harness the strengths of Illinois' food and agriculture sector. As a neutral third-party convener and connector, FARM Illinois is building a platform for non-partisan collaboration that convenes government, NGOs, and industry members. Through a collaborative network, FARM Illinois partners are joining forces to align strategic priorities, spark innovation, improve coordination, catalyze new collaborations, increase visibility, and build trust. In short, FARM Illinois is creating the enabling environment to ensure Illinois' food and agriculture sector continues to be a driver of the state's economy while also addressing environmental and societal challenges.

The FARM Illinois Roadmap's six goals:

- 1. Leadership for Innovation:** Develop an integrated, statewide, long-term, public-private strategy for achieving the goals of the FARM Illinois strategic plan.
- 2. Business Development and Entrepreneurship:** Spur business growth and investment by making Illinois the preferred destination for food and agriculture companies of all sizes.
- 3. Workforce and Education:** Develop a high-quality workforce for food and agriculture and educate Illinois policy makers and the general public on sector innovation.
- 4. Resource Management:** Ensure that Illinois is sustainably protecting and managing its natural resources.
- 5. Infrastructure:** Ensure Illinois' infrastructure is capable of supporting the state's ability to sustainably meet its own needs while being a global leader in food and agriculture.
- 6. Branding and Market Development:** Develop larger and more diverse local, regional, national, and international markets for Illinois' agriculture and food products by raising Illinois' profile.