Forecasting Change: Examining the Future of Agricultural Data Processors and Ownership Rights

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I. INTRODUCTION

Today, agricultural data technology innovations have yielded major benefits for farming efficiency. However, those innovations come with a host of privacy and data concerns for local farmers that has left Congress at a standstill for a resolution.[1] Collaboration with "big data" companies provides farmers with invaluable levels of information for their farming needs, but also spurs concerns that farmers are sacrificing too much control over their own private farming data.[2] A variety of "big data" companies are trying to ease some of these concerns by compromising on a solution that leaves farmers satisfied with the level of control over their data without sacrificing the benefits of open sharing of data.[3] As such, there are a variety of important property ownership issues that courts will have to resolve as this data technology becomes more commonplace. This Note will explore these legal issues while recommending that data companies aggressively engage farmers privately through contract to avoid future litigation.

Part II discusses the background and historical development of agricultural technology providers and how advancements in data storage and the rise of third-party data aggregators have created a host of complicated legal concerns for farmers and agricultural technology providers. Part III analyzes a variety of opinions related to advising farmers on proactively confronting these issues and how data aggregators can ease their privacy concerns. Part IV recommends contract provisions and introduces policy arguments for why data companies should aggressively advocate for the mutual benefits of open data sharing with farmers.

II. BACKGROUND

This Note first examines the advancements in agricultural technology and introduces the legal issues these advancements created. It then explores how farmers have benefitted from this technological advancement while also introducing key issues of data privacy. Finally, this Part introduces Iowa's interpretation of uniform trade secret laws and their potential applicability to agricultural data providers.

A. The Development of Agricultural Technology Providers

Before examining the legal issues surrounding big data and agricultural technology providers, it is first necessary to examine certain key aspects and background information regarding the technology. Precision farming is a method that links information for crop-planting conditions to digitally operated farm equipment.[4] One of the key methods of precision farming is yield monitoring.[5] Yield monitors use electronic sensors and a

1. *See infra* Part II.C (describing how Congress has been reluctant to consider legislative solutions).

2. *See infra* Part II.B (describing farmers' privacy concerns).

3. *See infra* Part II.C (describing how companies such as DowDuPont and John Deere have created guidelines for agricultural data contracts).

4. James R. Walter, *A Brand New Harvest: Issues Regarding Precision Agriculture Data Ownership and Control*, 2 DRAKE J. AGRIC. L. 431, 431–32 (1997).

5. *See generally* Lisa Heacox, *Yield Monitor Tips, New Technologies*, PRECISIONAG (Aug. 6, 2015), http://www.precisionag.com/systems-management/data/yield-monitor-tips-new-technologies/ (describing how "in 2012, yield monitors had the second highest adoption rate among precision ag tools").

computer coupled with a combine to transmit data to agricultural technology providers.[6] Additionally, a precision method known as grid soil sampling allows farmers to examine the nutrient status of their fields.[7] Precision grid sampling in particular provides farmers with digitally generated grids of their own fields and recommends techniques, such as fertilizer application, specially tailored to each farmer's precise needs.[8] Agricultural technology providers both store and analyze this data so that farmers can implement the provider's suggestions.[9]

Today, venture capitalist investment in agricultural technology represents a $25 billion industry, and is only continuing to grow.[10] In Iowa alone, agricultural data is a $300 million industry.[11] The aforementioned technology allows farmers to maximize their farms' potential by using data to know what crops to plant and how to plant them.[12] According to the 2012 USDA Agricultural Resource Management Survey, more than 62% of corn and soybeans were harvested using advanced agricultural technology providers, which are most commonly referred to as "big data."[13]

What exactly defines agricultural data has been a subject of debate for both lawmakers and policy experts.[14] Examples of agricultural "big data" include weather data sets, satellite imagery of farming areas, crop insurance records, and a variety of aggregated farm data.[15] This is distinguished from information that will likely never qualify as agricultural data such as farmers' financial records, logistics, and work schedules.[16] These distinctions could make a difference in determining what legal rights farmers have to proprietary information stored on data systems.[17] However, the most challenging issue facing legal experts may not be how to classify the data, but how to ensure farmers retain confidence in an evolving industry rife with legal and security uncertainties.[18]

B. Agricultural Technology Providers' Benefits for Farmers

Although farmers remain skeptical and cautious about the data security concerns posed by agricultural data providers, they are reaping many benefits from the technology.[19]

6. Walter, *supra* note 4, at 434–35.

7. *Soil Sampling for Precision Agriculture*, U. NEB.-LINCOLN INST. AGRIC. & NAT. RESOURCES: CROPWATCH, https://cropwatch.unl.edu/ssm/soilsampling (last visited Sept. 6, 2018).

8. *See id.* (describing how farmers use digital technology to their benefit).

9. Walter, *supra* note 4, at 438.

10. Shruti Singh, *Agricultural Tech Investment Rises to Record $25 Billion*, BLOOMBERG (Oct. 24, 2016, 11:01 PM), https://www.bloomberg.com/news/articles/2016-10-25/agricultural-technology-investment-rises-to-record-25-billion.

11. *Id.*

12. Michael E. Sykuta, *Big Data in Agriculture: Property Rights, Privacy and Competition in Ag Data Services*, 19 INT'L FOOD & AGRIBUSINESS MGMT. REV. 57, 58 (2016).

13. *Id.*

14. *Id.* at 62.

15. THE HALE GROUP, THE DIGITAL TRANSFORMATION OF ROW CROP AGRICULTURE 9 (2014), https://www.iowafarmbureau.com/page/file?path=Files%2Fwebsite%2FNews%2FPDFs%2Fagesmed.pdf.

16. *Id.*.

17. *See generally id.* (describing how certain aspects of farming will "always be important" even if not categorized as agricultural data).

18. Sykuta, *supra* note 12, at 63.

19. THE HALE GROUP, *supra* note 15, at 6.

Major agricultural producers such as Monsanto, John Deere, SST Software, and DuPont Pioneer have embraced this agricultural revolution through substantial investments.[20] In 2012, Monsanto bought FieldScripts services, which allows farmers to specifically tailor their individual farming needs using hybrid seeds.[21] Monsanto spent $1 billion on the company's database which contained topographical maps of 25 million American fields along with weather simulation modeling systems.[22] Although companies like Monsanto and John Deere are usually considered the predominant agricultural technology providers, start-ups are also beginning to enter the industry.[23] For example, start-up agricultural data provider Farmer Business Network, a company of 37 employees,[24] allows farmers to submit their own farm data to the company to compare information with farmers nationwide.[25] Using this data, Farmers Business Network advises farmers on how to find the best seeds for their soil and view a "*Consumer Reports*-like review of hundreds of agricultural products."[26] In addition, free software start-ups like 640 Labs have offered farmers a cheaper alternative in the agricultural data market.[27] 640 Labs uses freely available rainfall totals available on sites like the National Weather Service and geographic data from Google Maps to advise farmers.[28] Furthermore, non-profit organizations like AgGateway allow agricultural businesses to join their community and submit their agricultural business plans for review by their experts.[29] AgGateway then hosts annual conferences, which provides farmers with information on recent advancements in agricultural data practices and hosts networking opportunities for farmers.[30]

Additionally, the open sharing of agricultural data has prompted the development of tools like ADAPT which bring the benefits of interoperability to agricultural data platforms.[31] Interoperability is the "ability of computerized systems to connect and communicate with another readily, even if they were developed by widely different

20. *Id.* at 15.

21. Orlan Love, *Big Data Fueling Iowa Farmers' Productivity*, THE GAZETTE (July 15, 2014), http://www.thegazette.com/subject/news/big-data-fueling-iowa-farmers-productivity-20140715.

22. Monty Guild & Tony Danaher, *Big Data Comes to the Farm*, FIN. SENSE, (Jun. 10, 2014), https://www.financialsense.com/contributors/guild/big-data-farm.

23. Issie Lapowsky, *How Farmers Can Use Big Data to Push Back Against Big Ag*, WIRED (May 19, 2015), https://www.wired.com/2015/05/farmers-business-network/.

24. *Id.*

25. *Id.*

26. *Id.*

27. *See* Karl Plume, *The Big Data Bounty: U.S. Startups Challenge Agribusiness Giants*, REUTERS (Oct. 8, 2014, 1:06 AM), https://www.reuters.com/article/us-usa-farming-startups/the-big-data-bounty-u-s-startups-challenge-agribusiness-giants-idUSKCN0HX0C620141008 [hereinafter Plume, *The Big Data Bounty*] (discussing how start-up farming companies are attempting to challenge other data technology providers).

28. *Id.*

29. JIM WILSON, AGGATEWAY, EBUSINESS FUNDAMENTALS FOR THE AGRICULTURE PROFESSIONAL9 (Jun. 2015), http://www.aggateway.org/Portals/1010/WebSite/Get%20Connected/eBusiness%20Fundamentals%20White%20Paper.pdf?ver=2016-12-19-232149-607 (discussing the changing landscape of agricultural business and how farmers can adapt to a digital era).

30. *Take Advantage of AgGateway Events*, AGGATEWAY, http://www.aggateway.org/Events/EventsOverview.aspx (last visited Feb. 10, 2018).

31. *Adapt: Ag Data Application Programming Toolkit*, AGGATEWAY, https://adaptframework.org/ (last visited Sept. 6, 2018).

manufacturers in different industries."[32] In the past, critics have claimed that one of the downsides of precision agriculture was that compatibility among the platforms was not "user-friendly" for farmers.[33] Specifically, companies' systems, like John Deere's big data system, APEX, were incompatible with most other big data systems and their privacy agreements stated that farmers do not own their own data.[34] Describing the problems of compatibility, Open Ag Data Alliance founder Aaron Ault stated, "One of the reason [s] is nothing works together today. One company's stuff doesn't work with others, one has a way of handling data, another one doesn't."[35]

Today, platforms like ADAPT are committed to improving connectivity across platforms.[36] Through open-sharing of software data, farmers easily transfer agricultural data applications across different platforms.[37] This type of connectivity helps farmers who now work primarily from phones and tablets.[38] Furthermore, programs like FieldScripts helped increase farmers corn yields by five to 10 bushels per acre while relying on the open-sharing of data.[39] Similar developments are occurring internationally as well.[40] In Europe, organizations such as the Wheat Data Interoperability Working Group have

32. Stephen O'Connor, *What Is Interoperability, and Why Is It Important?*, ADVANCED DATA SYS. CORP. (May 30, 2017), http://www.adsc.com/blog/what-is-interoperability-and-why-is-it-important.

33. *See* Paul Schrimpf, *Darker Reflections on The State of Data (Perspective)*, PRECISIONAG (Sept. 9, 2015), http://www.precisionag.com/systems-management/data/darker-reflections-on-the-state-of-data-perspective/ (explaining that data agriculture software is highly specific to each platform and that it can be analogized to having phone applications only working for one specific cell provider and not others).

34. Lyndsey Gilpin, *How Big Data is Going to Help Feed Nine Billion People by 2050*, TECHREPUBLIC, https://www.techrepublic.com/article/how-big-data-is-going-to-help-feed-9-billion-people-by-2050/ (last visited Oct.. 8, 2018).

35. *Id.*

36. *See* Paul Schrimpf, *AgGateway Tees Up Precision Systems Connectivity With ADAPT*, PRECISIONAG (Feb. 25, 2016), http://www.precisionag.com/systems-management/data/aggateway-tees-up-precision-systems-connectivity-with-adapt/ (explaining that previous criticisms about the compatibility of data software among platforms have been addressed by the development of open data sharing programs like ADAPT); *see also* Michael E. Porter & James E. Heppelmann, *How Smart, Connected Products Are Transforming Competition*, HARV. BUS. REV. (Nov. 2014), https://hbr.org/2014/11/how-smart-connected-products-are-transforming-competition (describing how compatibility across big data software is improving as third parties gain increased access through open application programming interfaces); Aaron Ault et al., *Mobile, Cloud-Based Farm Management: A Case Study with Trello on My Farm* (Am. Soc'y. Agric. & Biological Eng'rs, Annual International Meeting Paper No. 131593538, 2013), https:// oatscenter.org/docs/paper_ault_1.pdf (describing how the program Trello permits farmers to share data records between multiple workers on the same farm and assures long-term ownership of the farmers' data).

37. Schrimpf, *supra* note 36.

38. *See* Amanda Faulkner & Kerry Cebul, *Agriculture Gets Smart: The Rise of Data and Robotics*, CLEANTECH GROUP 5 (May 2014), https://www.cleantech.com/wp-content/uploads/2014/07/Agriculture-Gets-Smart-Report.pdf (describing how connectivity is improving for farmers in rural regions as companies continue to develop WiFi networks permitting farmers to embrace mobility).

39. *See* Guild & Danaher, *supra* note 22 (describing how the crowd-sourced FieldScripts becomes more efficient with an increase in users sharing data. Danaher analogizes it to the phone application Waze noting that, "[t]he more drivers use it, the more useful it becomes to all of them, because the more accurate its pictures of current traffic conditions"); *See also* Sjaak Wolfert et al., *Big Data in Smart Farming – A Review*, 153 AGRIC. SYS. 69 (2017), https://www.sciencedirect.com/science/article/pii/S0308521X16303754 (explaining the term "data chain" which refers to how the utility of big data increases as more users use it).

40. *See* Esther Dzalé Yeumo Koboré et al., *Opening and Linking Agricultural Research Data*, 20 D-LIB MAG. (Jan./Feb. 2014), www.dlib.org/dlib/january14/kabore/01kabore.html (describing how European companies have begun developing open-sharing agricultural technology platforms).

committed to the open sharing of agricultural wheat data to "promote . . . wheat data sharing, reusability and operability."[41] Researchers, growers, breeders, and data users alike use this framework to openly share data to improve wheat harvesting.[42]

C. Who Owns the Data? Farmers' Concerns Regarding Data Privacy

Although farmers have benefitted from the new data provided by agricultural technology providers, they have caused a variety of concerns about their data privacy.[43] Between 2014 and 2015, the FBI reported a 53% increase in all types of data and economic espionage.[44] Farmers in Tama, Iowa, recently encountered this issue in 2011.[45] In this incident, a Chinese citizen was apprehended after attempting to steal patented seeds and transmit these secrets to international companies.[46] The thief pled guilty to conspiracy to steal trade secrets.[47] Now, the same issues are seeping into the field of agricultural data.[48] Farmers are concerned that their information could be used without their knowledge or consent.[49] Specifically, farmers fear that the data could be sold to competitors.[50]

Consumer advocacy groups attempted to ease these data and privacy concerns by aggressively lobbying for consumer protection provisions in contracts with farmers.[51] Companies like Iowa's Farm Bureau drafted a Code of Conduct which attempts to reassure farmers that the farmers own and control their data.[52] Unfortunately for big data aggregators, these efforts have not adequately relieved farmers' concerns.[53] According to a 2014 Hale Group research survey, 65% of farmers are skeptical or fearful of the new technology.[54] Only 16% view the technology as something that is "here to stay."[55] Farmers' main concerns are that the farm data could be abused and misused by the government, hackers, or even the data companies themselves.[56] Additionally, farmers fear the product could favor large farmers or be biased in favor of products that big data providers sell to other farmers.[57]

These concerns are not completely unfounded.[58] Researchers have compared major

41. *Id.*
42. *Id.*
43. THE HALE GROUP, *supra* note 15, at 22.
44. Christopher Doering, *Thieves See Ag Trade Secrets as Ripe for Picking*, DES MOINES REG. (Mar. 7, 2016, 12:30 PM), https://www.desmoinesregister.com/story/money/agriculture/2016/03/07/thieves-see-ag-trade-secrets-ripe-picking/80818464.
45. *Id.*
46. *Id.*
47. *Id.*
48. *See* Love, *supra* note 21 (disclosing privacy concerns).
49. Gilpin, *supra* note 34.
50. *See id.* (discussing how a farmer's worst fear is their data being used by their neighbor farmers to persuade a landlord that the farmer's low productivity could be resolved by having the neighbor work the field instead).
51. *Id.*
52. Love, *supra* note 21.
53. *See* THE HALE GROUP, *supra* note 15, at 22 (describing the variety of data concerns of farmers).
54. *Id.*
55. *Id.*
56. *Id.*
57. *Id.*
58. *See generally* Lauren Manning, *Setting the Table for Feast or Famine: How Education Will Play A*

hackings such as those at Target and Apple's iCloud to the kind of data hacks that could affect similarly vulnerable agricultural big data processing servers.[59] Recently, a hack of Equifax compromised the data security of an estimated 143 million Americans.[60] As such, state legislators began responding to these hacking threats.[61] However, on the federal level, Congress has not yet passed legislation to protect farmers' data.[62] Agricultural law experts such as Shannon Ferrell have advocated for protecting this data like Congress expressly protects patient data under the Health Insurance Portability and Accountability Act (HIPAA).[63] Until Congress chooses to respond legislatively, these issues will remain unresolved.[64]

In addition to code of conduct provisions, agricultural data providers have sought an alliance with consumer advocacy groups to emphasize key features that should be present in every contract with farmers.[65] Agricultural technology providers drafted the Privacy and Security Principles for Farm Data to emphasize these features, which includes a commitment to contractual freedom for farmers along with liability and security safeguards.[66] Over 30 agricultural technology providers and consumer advocacy groups have signed onto the pledge including major companies like DowDuPont and John Deere.[67] However, the pact is not legally binding and merely represents a list of goals to be emphasized in contract formation, causing farmers to remain skeptical of the protections afforded by the pact.[68]

Deciding Role in the Future of Precision Agriculture, 11 J. FOOD L. & POL'Y 113, 137 (2015) (discussing the concerns of farmers regarding data security and examining how data breaches could represent a threat to agricultural technology providers).

59. *Id.* at 137–39.

60. Eric Geller, *Equifax Hack Exposes 143 Million Americans' Personal Data*, POLITICO (Sept. 7, 2017, 5:47 PM), https://www.politico.com/story/2017/09/07/equifax-hack-exposes-millions-data-242458.

61. *See* Press Release, Maura Healey, Attorney Gen. Mass. Gov't, Following Equifax Hack, AG Healey & Legislators Announce Data Breach Bill to Better Protect Mass. Residents (Sept. 25, 2017), http://www.mass.gov/ago/news-and-updates/press-releases/2017/2017-09-25-data-breach-bill.html (discussing how Massachusetts has placed additional regulations on credit companies such as requiring written consent before using a consumer's credit report).

62. Ben Berliner, *Should Congress Protect Agricultural Data?*, FCW (Nov. 20, 2017), https://fcw.com/articles/2017/11/20/ag-data-senate-berliner.aspx.

63. *Id.* (describing how HIPAA protects patient data by clearly defining consumer rights and that farmers could benefit for a similarly narrowly defined definition of "agricultural data").

64. *See generally id.* (detailing how legislators have been reluctant to respond proactively to farmers' data privacy concerns).

65. *Privacy and Security Principles for Farm Data*, FARM BUREAU, https://www.fb.org/issues/technology/data-privacy/privacy-and-security-principles-for-farm-data (last visited Feb. 5, 2018).

66. *Id.*

67. *Id.*

68. *See* Karl Plume, *Farm Groups, Ag Tech Companies Agree on Data Privacy Standards*, REUTERS (Nov. 13, 2014, 4:31 PM), https://www.reuters.com/article/us-usa-agriculture-data/farm-groups-ag-tech-companies-agree-on-data-privacy-standards-idUSKCN0IX2NU20141113 (discussing the American Farm Bureau Federation's non-binding principles on data collection and storage).

D. Categorizing Agricultural Data Under the Current Legal Framework

1. Analyzing Agricultural Data Under the Trade Secret Regime

Agricultural data expert Todd Janzen noted that "for farm data ownership to exist, farm data must fit into an already existing legal framework."[69] He hypothesized that farm data ownership will likely not be litigated under patent claims because farmers will find that patenting data is too expensive.[70] Additionally, copyright law probably does not provide adequate protections for farmers seeking to protect their data.[71] As such, under the current legal framework, trade secret law is likely the only area of law that provides farmers protection.[72]

In Iowa, case law interpreting what qualifies as a trade secret could present major concerns for both agricultural data providers and farmers.[73] The Iowa Supreme Court has stated that "[t]here is virtually no category of information that cannot [qualify as trade secrets], as long as the information is protected from disclosure to the public, [it] constitute[s] a trade secret."[74] Iowa trademark statutes state that the only major limitation on what defines a trade secret is whether the information falls into the public domain and contains economic value.[75]

2. Examining the Uniform Trade Secrets Act and the Defend Trade Secrets Act of 2016

One of the dispositive questions when resolving who owns disputed data is whether agricultural data is protected under the Uniform Trade Secrets Act (UTSA).[76] The UTSA has been adopted in 47 states including Iowa.[77] The UTSA defines a "trade secret" as:

> Information, including a formula, pattern, compilation, program, device, method, technique, or process, that: (i) derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable

69. TODD JANZEN, BIG DATA IN AG: LEGAL ISSUES SURROUNDING FARM DATA OWNERSHIP, TRANSFER AND CONTROL 2 (June 13, 2016), http://c.ymcdn.com/sites/www.iowabar.org/resource/resmgr/2016_Annual_Meeting_Materials_/Ag_Law_Todd_Janzen_Big_Data_.pdf.

70. *See id.* (explaining that farm data likely does not meet the "new" or "non-obvious" requirements of a patent and that patent laws would be expensive for farmers to navigate).

71. *Id.* at 2 (explaining that copyright law is likely not applicable to farm data because it lacks the creative element requirement for copyright such as art and literature).

72. *See id.* (stating that the laws of trade secrets are the only real path for protection of farm data).

73. *See id.* at 2–4 (describing that most legal issues regarding agricultural data ownership will likely be litigated under trade secret laws).

74. U.S. W. Commc'ns., Inc. v. Office of Consumer Advocate, 498 N.W.2d 711, 714 (Iowa 1993) (quoting Thomas J. Collin, *Determining Whether Information is a Trade Secret Under Ohio Law*, 19 U. TOL. L. REV. 543, 545 (1988)).

75. Bus. Designs v. Midnational Graphics, No. 2-085 / 01-1087, 2002 Iowa App. LEXIS 524, at *6 (Iowa Ct. App. May 15, 2002).

76. Todd Janzen, *Is Farm Data a Trade Secre?t*, JANZEN AG L.: JANZEN AG. L. BLOG (Sept. 30, 2015), http://www.aglaw.us/janzenaglaw/2015/9/30/is-farm-data-a-trade-secret.

77. *See generally* SID LEACH, SNELL & WILMER, L.L.P., ANYTHING BUT UNIFORM, A STATE-BY-STATE COMPARISON OF THE KEY DIFFERENCES OF THE UNIFORM TRADE SECRET ACT 48 (2015), https://www.swlaw.com/assets/pdf/news/2015/11/06/How%20Uniform%20Is%20the%20Uniform%20Trade%20Secrets%20Act%20-%20by%20Sid%20Leach.pdf.

> by proper means by, other persons who can obtain economic value from its disclosure or use, and (ii) is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.[78]

However, the UTSA has undergone some statutory modifications in Iowa that could present some minor legal questions as to how data providers' issues could play out in the state.[79] Part of the modification is a statutory affirmative defense based on implied or express consent.[80] The question, as applied to agricultural data, will be whether sharing this data with agricultural data providers destroys the "secrecy" of the data and thus leaves it unprotectable by trade secret laws.[81]

In addition to the UTSA, Congress passed the Defend Trade Secrets Act (DTSA) in 2016.[82] Before the DTSA passed, companies could only file for trade secret misappropriation lawsuits in state courts.[83] Now, the DTSA creates a federal cause of action for plaintiffs.[84] However, the DTSA defines "trade secret" slightly differently than the UTSA. Under the DTSA, a trade secret is defined as:

> all forms and types of financial, business, scientific, technical, economic, or engineering information, including patterns, plans, compilations, program devices, formulas, designs, prototypes, methods, techniques, processes, procedures, programs, or codes.[85]

E. Analyzing Analogous Social Media User Agreements

Advocates for data protection point to privacy policies as a way of negotiating privacy rights with users.[86] Whether such policies will benefit agricultural data providers remains to be seen.[87] However, recent issues surrounding Facebook and LinkedIn could provide insight into how these policies would apply to agricultural technology providers. Facebook's privacy policy is ambiguous as to limitations placed on its usage of information that users upload to the site.[88] Facebook's privacy policy states that they have the right to the "use" of your information.[89] These "uses" are so ambiguously defined that Facebook can use the data for social advertising and has no restrictions on selling data to third-parties.[90] This Note will later warn agricultural data technology providers against using a

78. UNIF. TRADE SECRETS ACT § 1(4), 14 U.L.C. 369 (1986).
79. LEACH, *supra* note 77, at 14.
80. *Id.*
81. JANZEN, *supra* note 69, at 2–4.
82. Bret Cohen et al., *Explaining the Defend Trade Secrets Act*, ABA (Sept. 2016), https://www.americanbar.org/groups/business_law/publications/blt/2016/09/03_cohen/.
83. *Id.*
84. *Id.*
85. 18 U.S.C. § 1839 (2016).
86. *See generally* Manning, *supra* note 58, at 142 (discussing how Facebook's privacy policy updates leave open many questions as to how the data can be used by the site. Specifically, Facebook may not sell the information without the user's knowledge. However, it grants Facebook the right to "use" the user's information, which remains a vague policy).
87. *Id.* at 114–18.
88. *Id.*
89. *Id.* at 142.
90. *Id.*

similar user agreement in their own user agreements.[91]

However, a recent case involving LinkedIn could signal that courts are becoming hostile to the idea of data privacy of information voluntarily provided to data aggregators. A U.S. district court judge recently ordered Microsoft, parent company of LinkedIn, to allow third-party companies to "scrape" data publicly posted by LinkedIn users.[92] In this case, a third-party software company, hiQ Labs, sold data posted by LinkedIn users to companies targeting people who were categorized as likely going to leave their jobs.[93] Microsoft sought an injunction of these practices as a violation of the website's terms of service agreement because some of the profiles were private.[94] Microsoft also claimed that the Computer Fraud and Abuse Act outlawed the "data scraping" being done by defendant hiQ.[95] Of particular importance is the court's analysis of the public interest factors in the case.[96] The Northern District Court of California held that public interest factors regarding free speech weighed in favor of hiQ.[97] The court stated that "the actual privacy interests of LinkedIn users in their *public* data are at best uncertain. It is likely that those who opt for the public view setting expect their public profile will be subject to searches, data mining, aggregation, and analysis."[98] As such, this case may represent an initial framework for how courts may analyze data privacy agreements and that such agreements may not provide adequate protections users seek against third-party usage of their information.

III. ANALYSIS

A. The Future of Agricultural Data: Legal Uncertainties

Since agricultural data and the rights of farmers are an ongoing issue, a variety of legal issues are yet to be addressed. It is necessary to examine whether specific Iowa public policies compel a certain interpretation of the Act and how to strike a balance between protecting farmers' rights while preserving the thriving area of data commerce. Additionally, public policy may also favor the development of agricultural data because it will help less economically developed areas throughout the world. If this issue were litigated, would agricultural data qualify for protection under the UTSA? Finally, how does Iowa's interpretation of the UTSA and specific statutory protections create uncertainty for data aggregators?

91. *See infra* Part IV.B (describing how user agreements should be structured to assure farmers that their data is their own).

92. Tom Warren, *Microsoft Ordered to Let Third Parties Scrape LinkedIn Data*, THE VERGE (Aug. 15, 2017, 5:44 AM), https://www.theverge.com/2017/8/15/16148250/microsoft-linkedin-third-party-data-access-judge-ruling.

93. *Id.*

94. *Id.*

95. Timothy B. Lee, *Court Rejects LinkedIn Claim That Unauthorized Scraping is Hacking*, ARS TECHNICA (Aug. 15, 2017, 1:05 PM), https://arstechnica.com/tech-policy/2017/08/court-rejects-linkedin-claim-that-unauthorized-scraping-is-hacking/.

96. *See generally id.* (discussing how LinkedIn was disappointed in the court's ruling on the public interest factors and plans to challenge it in the appeals process).

97. hiQ Labs, Inc. v. LinkedIn Corp., 273 F. Supp. 3d 1099, 1120 (N.D. Cal. 2017).

98. *Id.* at 1119.

1. In Support of an Open Data Sharing Policy: How Iowa's Policies Have Attracted Data Aggregators and Aid Impoverished Nations

Before addressing the issue of whether agricultural data qualifies as trade secret information, it is worth examining the policy argument for maintaining an open-sharing network. In Iowa, there is a policy argument that maintaining tech-friendly data policies attracts new business.[99] Iowa is an appealing place for data processing centers because of its low electricity rates and lack of sales tax on power use.[100] Companies like Google and Facebook have worked with energy companies in the state to ensure their data processing centers will be entirely wind-powered.[101] Microsoft's expansion into West Des Moines cost an estimated $1.1 billion.[102] Joining Microsoft, Apple announced plans to build a $1.375 billion data center in Iowa, with plans for the structure to be fully operational by 2020.[103] Furthermore, in 2017, Apple was attracted to innovative international data sharing policies and built its own data sharing center in China as well as expanding to places like the Netherlands and Germany.[104] These expansions reflect the fact that data companies respond to the laws and policies governing data processing centers. Altering Iowa's data protection policies as applied to farmers could have much larger implications on the future of data processing center development in Iowa.

In addition to economic policy weighing in favor of the open sharing of data, there are also social benefits to the open sharing of data.[105] Precision farming has been described as the "holy grail" for resolving food scarcity by policy experts due to its ability to address problems such as food supply and demand imbalance.[106] Market experts are hopeful that by developing data precision technology in the United States, similar operations will be able to expand into the developing world.[107] Data aggregate proponents argue that smaller farms will benefit most from this technology, and similar technology can be developed in

99. *See generally* Mike Franklin, *Want to Attract Amazon? Try Winning the Wind Race*, MINNPOST (Sept. 22, 2017), https://www.minnpost.com/community-voices/2017/09/want-attract-amazon-try-winning-wind-race (describing how Iowa's wind energy policies as well as its data processing center policies are attracting data companies).

100. Ingrid Burrington, *Why Are There So Many Data Centers in Iowa?*, THE ATLANTIC (Dec. 1, 2015), https://www.theatlantic.com/technology/archive/2015/12/why-are-so-many-data-centers-built-in-iowa/418005/.

101. *Id.*

102. *Id.*

103. Anna Hensel, *Apple to Build Data Center in Iowa, Joining Microsoft, Facebook, and Google*, VENTURE BEAT, (Aug. 24, 2017, 11:08 AM), https://venturebeat.com/2017/08/24/apple-to-build-data-center-in-iowa-joining-microsoft-facebook-and-google/.

104. Paul Mozur et al., *Apple Opening Data Center in China to Comply With Cybersecurity Law*, N.Y. TIMES (July 12, 2017), https://www.nytimes.com/2017/07/12/business/apple-china-data-center-cybersecurity.html.

105. *See* Nir Kshetri, *The Emerging Role of Big Data in Key Development Issues: Opportunities, Challenges, and Concerns*, BIG DATA & SOC'Y (2014), http://journals.sagepub.com/doi/pdf/10.1177/2053951714564227 (discussing how agricultural data will allow policymakers to respond better to famine crises while also improving agricultural efficiency of developing countries' agriculture).

106. *See* Wolfert et al., *supra* note 39, at 76 (discussing how public institutions such as the USDA see potential in precision agriculture to solving problems of food security and sustainability).

107. John Roach, *Can Data-Driven Agriculture Help Feed a Hungry World?*, YALE ENVIRONMENT 360 (Mar. 3, 2016), http://e360.yale.edu/features/can_data-driven_agriculture_help_feed_a_hungry_world.

places like sub-Saharan Africa and India.[108] Agricultural experts state that aggregation of data plays a vital role for using existing farmland to prevent agricultural expansion into the wetlands and rainforests.[109] Discussing data aggregation, Kenneth Cassman, an agronomist at the University of Nebraska-Lincoln, claimed that "we have been successful raising yields, or reducing environmental footprint, but not both at the same time, and that is the greatest scientific challenge facing humankind. Big data will be essential to bring together all the information a farmer needs."[110] At the American Association for the Advancement of Science conference, researchers concluded that satellite imaging of small family farms was the primary approach for preventing hunger.[111] Currently, data aggregation is in its infancy and mainly gives agricultural advice to farmers, but its future data potential relies on further developing these technological foundations.[112] Therefore, public policies that maintain data aggregation's development without stifling it with regulations may also impact impoverished areas which need the data in the future. By allowing agricultural technology to evolve in states like Iowa, the technology could develop a more agriculturally efficient world.

2. How Agricultural Data is being Used Around the World by Scientists to Combat Climate Change

In addition to helping combat famine, scientists utilize big data to help farmers combat climate change. The UN recently recognized Latin American researchers with an award for their work using agricultural data to help Latin American farmers increase crop yields as well as combat climate change.[113] These researchers helped teach farmers to rely on custom weather forecasts that are tailored specifically for their local farms instead of using weather stations that were "hundreds of kilometres away."[114] Climate change frustrates Latin American farmers because they can no longer rely on past assumptions about their local climate due to rapidly changing climate conditions.[115] These data-driven agricultural models are helping Latin American farmers predict once unpredictable weather patterns.[116] In 2013, data analysts helped Columbian farmers save an estimated $3.8 million by advising them not to plant crops when they forecasted an unprecedented drought.[117] The

108. *Id.*

109. *Id.*

110. *Id.*

111. Mariah Quintanilla, *Solving World Hunger for 830 Million via Satellite Data*, MEDILL REP. CHI., (Feb. 19, 2017), http://news.medill.northwestern.edu/chicago/solving-world-hunger-for-830-million-via-satellite-data/.

112. *See id.* (describing how a data-driven sustainable agricultural system's development is reliant on further developing technology such as high-yield crop development).

113. Brett Worthington, *Latin American Researchers Helping Farmers Globally Combat Climate Change with Big Data*, AUSTL. BROAD. CORP. (Nov. 15, 2017, 8:46 PM), http://www.abc.net.au/news/rural/2017-11-16/big-data-farm-award-helping-to-tackle-climate-change/9156844.

114. *Id.*

115. Nathan Russell, *UN Awards Big Data Project for Confronting Crazy Weather in Rice Production*, CIAT BLOG (Sep. 2, 2014), http://ciatblogs.cgiar.org/support/un-awards-big-data-project-for-confronting-crazy-weather-in-rice-production/.

116. *See id.* (noting that "based on seasonal climate forecasts . . . researchers can give farmers reliable recommendations about the appropriate planting date").

117. Helen Clark, *How Big Data is Helping Farmers Save Millions*, NEW ATLAS (Oct. 27, 2014),

scientists used 10 years' worth of data from Columbian farms to make inferences about predicting a drought.[118] Similar projects are now looking to expand to areas like Nigeria.[119] Projects like "Big Data for Climate-smart Agriculture" are hopeful that combining farmers' self-generated data with site-specific climate data will enable farmers to plan for the future challenges of climate change.[120]

B. Analyzing Agricultural Data Under Current Legal Regimes: Applying the Trade Secret Factors

1. The UTSA Application and Iowa's Interpretation

Iowa applies the UTSA factors when assessing whether data qualifies as a trade secret.[121] If the issue of agricultural data was litigated in Iowa, the data would be subject to the six-part test:

> (1) the extent to which the information is known outside of the business; (2) the extent to which it is known by employees and others involved in the business; (3) the extent of measures taken to guard the secrecy of the information; (4) the value of the information to the business and its competitors; (5) the amount of effort or money expended in developing the information; (6) the case or difficulty with which the information could be properly acquired or duplicated by others.[122]

As this has been a frequently discussed topic, many agricultural law experts have speculated whether agricultural data would qualify as a trade secret.[123] Todd Janzen suggests that agricultural data likely qualifies because the method by which a crop is grown, such as a formula, pattern, or method, likely falls within the factor's meaning of trade secrets since it is ascertainable data.[124] Farming data possesses independent economic value because it has value to the individual farmer.[125] The Iowa Supreme Court held that trade secrets qualify as information "including but not limited to a formula, pattern, compilation, program, device, method, technique or process."[126] Applying the ascertainable factor, a court will consider whether the data is "generally not known or readily ascertainable to other farmers or agronomists."[127] Regarding the secrecy of the information factor, Janzen notes that the data may have to be shared anonymously in order

https://newatlas.com/big-data-crops-climate-change/34400/.

118. *Id.*

119. *Id.*

120. *See* Valeria Pesce, *Big Data for Climate and Agriculture*, BIG DATA EUR. (Nov. 9, 2017), https://www.big-data-europe.eu/big-data-for-climate-and-agriculture/ (describing how these programs have provided an opportunity for farmers and scientists to collaborate for climate change planning).

121. Reg Seneca, LLC v. Harden, 938 F. Supp. 2d 852, 858 (S.D. Iowa 2013).

122. Sun Media Sys., Inc. v. KDSM, LLC, 564 F. Supp. 2d 946, 969 (S.D. Iowa 2008) (alterations omitted) (quoting Kendall/Hunt Publ'g. Co. v. Rowe, 424 N.W.2d 235, 246 (Iowa 1988).

123. Janzen, *supra* note 76.

124. *Id.*

125. *Id.*

126. Econ. Roofing & Insulating Co. v. Zumaris, 538 N.W.2d 641, 646 (Iowa 1995).

127. Janzen, *supra* note 76 (internal quotations omitted).

to maintain its secrecy.[128]

2. Protections and Limitations of the Defend Trade Secrets Act

Furthermore, commentators have speculated on how the passage of the Defend Trade Secrets Act[129] pertains to the future of agricultural data privacy. The implications of the Act are that the Act is applicable to everyone, not just in circumstances of a trade relationship.[130] Therefore, a lawsuit for misappropriation does not require a relationship between an agricultural technology provider and a farmer.[131] Instead a farmer would also have a cause of action in circumstances where an employee is simply discussing business with someone outside of a formal relationship.[132] This Act as applied to farm data has been recently utilized by Monsanto.[133] There, a former data analyst and member of Monsanto's Climate Division resigned.[134] After his resignation, Monsanto discovered a malware device that potentially allowed third-parties to misappropriate sensitive private information stored in Monsanto's data systems.[135] Monsanto then sought a temporary restraining order under the DTSA for speedy relief.[136] Actions like this are reflective of how speedy relief under the DTSA may be transforming misappropriation cases.[137] However, it has yet been proven to be applicable to individual farmers and data experts remain skeptical of its usefulness compared to the UTSA.[138]

3. Distinguishing Traditional Trade Secret Analysis and Data Aggregation's Applicability

When determining whether agricultural data qualifies as a trade secret under Iowa law, the dispositive question is likely whether the data itself is generally unknown or is, instead, readily ascertainable to other farmers or agronomists. *Walker Manufacturing* examined whether certain farm equipment drawings of a sprayer qualified as a trade secret.[139] There, the court reasoned that a sprayer drawing did not qualify as a trade secret merely because the owner had stored the designs on a computer he claimed to contain trade secrets.[140] Because the data was shared openly with competitors and no reasonable

128. *Id.*
129. Cohen et al., *supra* note 82.
130. *Id.*
131. *Id.*
132. *Id.*
133. Shannon McCue, *Defend Trade Secrets Act – A Budding Avenue for Trade Secret Enforcement*, IP INTELLIGENCE: INSIGHT ON INTELL. PROP. (Aug. 15 2016), https://www.ipintelligencereport.com/2016/08/15/defend-trade-secrets-act-a-budding-avenue-for-trade-secret-enforcement/.
134. *Id.*
135. *Id.*
136. *Id.*
137. *Id.*
138. *See* Todd Janzen, *Making a Federal Case Out of Ag Data*, JANZEN AG L. BLOG, (Oct. 29, 2016), http://www.aglaw.us/janzenaglaw/dtsa (stating that for "farmers seeking to protect their ag data, the DTSA provides little additional protection").
139. Walker Mfg., Inc. v. Hoffman, Inc., 261 F. Supp. 2d 1054, 1068 (N.D. Iowa 2003).
140. *See id.* at 1083–84 (explaining the determination of whether 500 specifications on a computer qualified as trade secrets would depend on whether they were readily ascertainable via reverse engineering).

methods were taken to hide the information, it could not be considered a trade secret.[141]

Applying the trade secret test to agricultural data would likely lead to a different conclusion. First, based on the analysis offered by Janzen,[142] sharing the data anonymously likely amounts to an attempt to keep the data hidden. The data being shared with data aggregators is not like that in *Walker*, which dealt with a design hidden on a personal computer.[143] Therefore, the availability of the information either turns on the protections offered by the data aggregators themselves or the manner in which the farmers provide the information.[144] Farmers are skeptical of data aggregation and may have alternative legal and market avenues to protect their trade secrets. Some commentators have suggested that farmers utilize confidentiality agreements and precisely worded employee handbooks, which stress the importance of confidentiality.[145] Promoting a culture of confidentiality and negotiating for non-disclosure agreements would likely amount to an effort of maintaining secrecy.[146] This means that many farmers may likely qualify for the standards set forth in *Walker*, because the data is not generally known or readily ascertainable.

C. Responding to Farmers' Data Security Concerns

Due to the variety of unresolved legal issues, farmers continue to seek the advice of legal counsel for protecting their trade secrets. Legal commentators have advocated a variety of techniques that farmers can undertake to protect their data.[147] These recommendations emphasize having employees sign nondisclosure agreements and rigidly defining what is and is not a trade secret in context of the farming operations.[148] In addition, lawyers have recommended requiring majority votes by farm operators before farming information is shared with third parties and regulating access to information with passwords.[149] Legal commentators further advise farmers to outline the ownership of their data in their own lease agreements.[150]

1. Independent Competition: Farmers Have Options

The answer to farmers' concerns regarding data privacy may be resolved by smaller open-sharing data companies in a market which continues to expand. For farmers who want

141. *Id.*

142. Janzen, *supra* note 76.

143. *See Walker*, 261 F. Supp. 2d at 1084 (describing how the specifications at issue were found on a personal computer which were assumed to be marked as confidential).

144. *See* JANZEN, *supra* note 69 at 3 (clarifying the determination of whether agricultural data qualifies as a trade secret is dependent on how the farmer treats the data in their possession, as well as whether the information is ascertainable to the public).

145. Shannon L. Ferrell, *Legal Issues on the Farm Data Frontier, Part I: Managing First-Degree Relationships in Farm Data Transfers*, 21 DRAKE J. AGRIC. L. 13, 45 (2016).

146. *Id.* at 48.

147. Ashley Ellixson & Terry Griffin, *Farmers Must Actively Protect Data to Secure Trade Secret Protections*, MD. RISK MGMT. EDUC. BLOG (Nov. 16, 2016), http://agrisk.umd.edu/blog/farmers-must-actively-protect-data-to-secure-trade-secret-protections.

148. *Id.*

149. *Id.*

150. *See* JANZEN, *supra* note 69, at 4 (explaining that ownership of farm data can be divided into three categories: the tenant owns all the data generated on the farm, the landowner owns all the data, or the landowner and tenant can co-own all farm data generated).

to maintain control over their own data, projects like ISOBlue provide an open-share data platform that teaches farmers to capture and store their own data.[151] Additionally, software such as FarmLogs sells data analytics software that allows farmers to control their own data.[152] The CEO of FarmLogs, Jesse Vollmar, emphasizes the company's independence from other big agricultural data companies.[153] Cooperatives such as The Open Ag Data Alliance also address a growing awareness of farmers concerning the value of their own data. On their website, they allow users to access forums and discuss their own data issues.[154] The alliance pledges a commitment to "help farmers access and control their data."[155] This growing awareness could create a compelling legal challenge for data aggregators. If farmers continue to organize independently and seek options that provide more data protection, data aggregators such as Monsanto and Dow may be forced to respond by offering more data protection options to compete with these companies.[156]

2. Analyzing Privacy Agreements and hiQ's *Holding as Applied to Agricultural Data*

The privacy agreements discussed in the previous section could themselves generate interesting legal questions of ownership. The decision in *hiQ* may represent a shift in how courts are beginning to interpret data aggregation. There, the court determined that a website which aggregated publicly available information did not infringe upon the data rights of either the users or the defendant because the information was publicly available.[157] Of particular interest is how the court interpreted the public interest factors as applied to the open sharing of data. There, the court stated that LinkedIn's privacy agreement had too far of sweeping impact due to its expansive use of users' data.[158] Therefore, courts may look at a sample user agreement, like that at issue in *hiQ*, and determine that public interest factors favor the open sharing of data and not that the privacy agreement is completely binding.

Therefore, it is necessary to examine a sample user agreement provided by a data aggregator like that in *hiQ*. Monsanto provides users who utilize their farming data with a technology use agreement.[159] This user agreement details the rights that farmers maintain

151. Isabelle M. Carbonell, *The Ethics of Big Data in Big Agriculture*, 5 INTERNET POL'Y REV. 1, 8 (2016); *see also* Alexander W. Layton et al., *ISOBlue: An Open Source Project to Bring Agricultural Machinery Data into the Cloud*, (Am. Soc'y. Agric. & Biological Eng'rs., Annual International Meeting Paper No. 141929380, 2014), https://elibrary.asabe.org/abstract.asp?aid=45014&t=2&redir=&redirType= (describing how ISOBlue has allowed for compatibility across Android platforms).

152. Carbonell, *supra* note 151, at 7.

153. Plume, *The Big Data Bounty*, *supra* note 27 ("We've very explicitly avoided partnerships with any agricultural brands that could sway us one direction or another. I don't think that's appropriate.").

154. *Principals & Use Cases*, OPEN AG DATA ALLIANCE, http://openag.io/about-us/principals-use-cases/ (last visited Feb. 16, 2018).

155. Carbonell, *supra* note 151 at 7.

156. *See id.* at 5–7 (describing how farmers are beginning to seek out data companies that provide them more protection, which creates motivation for Monsanto to respond to data privacy concerns).

157. hiQ Labs, Inc. v. LinkedIn Corp., 273 F. Supp. 3d 1099, 1120 (N.D. Cal. 2017).

158. *Id.* at 1119 (holding that the public interest factors favored the plaintiff because granting LinkedIn the "blanket authority to block viewers from accessing information publicly available on its website . . . could pose an ominous threat to public discourse and the free flow of information promised by the Internet").

159. *See* Carbonell, *supra* note 151, at 2 (describing how Monsanto requires all users to sign a "Technology Use Agreement").

over their data by signing the agreement.[160] This agreement states that "you are consenting to the collection, use and disclosure of your personal information by Monsanto . . . (including your contact information, information about your farming practices and information about the specific nature of corn . . .)."[161] What differs between this and the privacy policy in *hiQ*, is that the privacy policy in *hiQ* promised privacy protection to its users against third parties. This type of user agreement is the opposite in that it is giving notice to its customers that their information can be used freely. If Iowa courts were to follow the rationale like that in *hiQ*, it is likely they would uphold the interpretation of the agreement as a matter of public policy.[162] Therefore, it is possible that the holding in *hiQ* represents a shift towards interpreting these privacy agreements in favor of data aggregation companies and the open sharing of data.[163]

IV. RECOMMENDATION

One of the main challenges when considering the regulation of agricultural data providers is how to regulate an industry that is still in its infancy. On one hand, strict regulations could burden developers and discourage entrances into a growing marketplace. On the other hand, leaving the industry largely unregulated could leave farmers feeling apprehensive as uncertainty about the industry continues to grow.[164] Responding to these concerns calls for an approach that enables farmers and data aggregators to negotiate terms without excessive legal interference. Therefore, data aggregators should proactively negotiate their own terms with farmers before legislators find it necessary to step in and protect farmers.

A. Free Speech Data Sharing Versus Standard Third-Party Data Aggregation: Data Aggregators' Reliance on the hiQ Labs *Framework Would be a Mistake*

The court decided in *hiQ* that the public interest factors weighed against enforcing a LinkedIn privacy agreement that protected its users from third-party data aggregators.[165] First, one could argue that due to the concentration of agriculture in California, where many data aggregators are located, this Northern District of California decision could begin to shape courts' analysis of farmers' lack of data retention rights. Since these data rights remain relatively undeveloped, it would be a mistake for data aggregators to feel protected by this ruling.

Second, the *hiQ* court largely based its opinion on a freedom of speech rationale

160. *Id.*

161. *Id.*

162. *hiQ Labs, Inc.*, 273 F. Supp. 3d at 1119.

163. Prayag Narula, *LinkedIn vs. hiQ Ruling Casts a Long Shadow Over The Tech Industry*, FORBES (Sep. 20, 2017), https://www.forbes.com/sites/forbestechcouncil/2017/09/20/linkedin-vs-hiq-ruling-casts-a-long-shadow-over-the-tech-industry/#7625cc0e5e6c (discussing how the implications of the case are that third party developers will be able to use publicly available data to enhance their own products without infringing on the now diminished rights of larger companies like LinkedIn.); *See also* Todd Janzen, *LinkedIn Case Shows the Limits of Data Ownership*, JANZENAGLAW (Oct. 17, 2017), http://www.aglaw.us/janzenaglaw/2017/10/16/linkedin-case-shows-the-limits-of-data-ownership (stating that the implications for agricultural data are that users will not be able to privatize publicly available information).

164. Ellixson & Griffin, *supra* note 147.

165. *hiQ Labs, Inc.*, 273 F. Supp. 3d at 1119.

balanced with the public policy rationale that enforcing the sharing of information freely is a favorable public policy.[166] LinkedIn's user agreements are different because the profiles are available publicly online. The data sharing rights at issue in the data aggregation context deal more with transactions between data aggregation companies and individual farmers. In addition, the court was interpreting this under a First Amendment framework when considering the profiles as speech. Here, data being shared with data aggregators is not publicly available speech. Therefore, this decision, although favoring data sharing rights, should provide little comfort to data aggregators due to the differences between the facts in the cases.

Courts should also consider treating the data aggregation provider market as different from the third-party companies at issue in *hiQ*. Since data aggregators, besides those smaller companies discussed earlier, are usually companies like Monsanto and DowDuPont, they are different from smaller start-up companies like in *hiQ*.[167] A company like Monsanto does not have the same concerns about being pushed out of the marketplace like a third-party start-up company. Therefore, courts should treat these companies as capable of negotiating fair data rights for farmers. Companies like hiQ were reliant on the sharing of this information as central to their business practices, whereas data aggregation represents a portion of these companies' business activities.

B. Protecting Innovation in the Marketplace: Courts Should Interpret Agricultural Data as a Trade Secret

Currently, the main uncertainty when resolving whether agricultural data qualifies as a trade secret is whether the data is "generally not known or readily ascertainable to other farmers or agronomists."[168] As data aggregation grows more complex, the data may also become more intricate and individualized beyond mere crop planting recommendations. As such, this data may not be "readily ascertainable" to others in the industry.[169] This is especially true if farmers begin pursuing unique types of agriculture currently unknown. To protect this kind of diversity in the marketplace, the public interests are in favor of farmers to incentivize the development of new agricultural techniques. If these techniques are not interpreted as "trade secrets," farmers may be hesitant to pursue innovative techniques as they are unprotected by the law. Therefore, courts should interpret these techniques as trade secrets as a matter of public policy.

Based on the foregoing analysis, since data aggregators cannot rely on courts to protect them, data aggregators need to be aggressive about avoiding litigation and negotiate privately with farmers to preemptively confront future legal problems. Currently, data aggregators stress their commitment to transparency rights for farmers.[170] However, data aggregation companies need to equip farmers with the necessary protections for their data. User agreement language such as "we presume you own the information and data that you

166. *See id.* at 1119–20 (explaining that the public interest factors weigh in favor of hiQ Laboratories because users should expect data that is shared publicly to be shared with other companies).

167. *See generally* Carbonell, *supra* note 151, at 2 (discussing the size of data aggregators).

168. Janzen, *supra* note 76.

169. *Id.*

170. *See Principals & Use Cases*, *supra* note 154.

provide to us"[171] is the exact kind of language that could deter farmers from negotiating with these companies due to the presumption that farmers do not own their own data. The language also assumes that the courts would uphold these kinds of agreements, which were not upheld in the case of LinkedIn's agreement.[172]

Instead, data aggregators should endorse a more transparent approach which directly addresses farmers' concerns about data privacy. User agreements should emphasize the protections that these companies offer against third-party data aggregators. In addition, endorsing an approach which protects the sharing of data as a joint venture does not make the agreement seem as one-sided to farmers. Finally, start-up companies like IsoBlue should also concern data aggregators that the competition within the marketplace means farmers may choose increased control over their data instead of contracting with larger data companies like Monsanto.[173] Therefore, companies should emphasize the social benefits of sharing information while also still affording farmers enough protections so that they feel comfortable contracting with major data aggregators.

C. Advertising the Social Benefits of Data Aggregation

As mentioned earlier, data aggregation could solve major issues related to poverty and hunger.[174] Framing it as a technology that benefits society as a whole could cause people to view the data aggregation positively, rather than something compromising farmers' proprietary data.[175] This is especially important when considering the fact that consumers are becoming increasingly socially conscious when purchasing products.[176] By appealing to these consumers, it could have the dual purpose of improving the reputation of large agricultural companies while also helping shape public opinion about agricultural technology providers. If consumers hold a positive view of data aggregators, it would likely decrease the pressure to legislate in this area.

To prevent burdensome interference in the data aggregation field, data aggregators should begin advertising the social benefits of the technology. First, farmers already hold a negative opinion of companies like Monsanto which are heavily investing in the data aggregation field.[177] To quell any potential public concerns about companies like Monsanto entering the data aggregation market, companies should stress the benefits of data technologies. Regarding the benefits of data aggregation, Enterprise Group CEO, Douglas Hackney, said, "From the brand management standpoint, the next big thing is data, so how to win in market? With a toxic brand, it makes a lot of sense to buy another brand and roll up everything in that."[178] Referring specifically to Monsanto's acquisition of big

171. Carbonell, *supra* note 151, at 8.

172. hiQ Labs, Inc. v. LinkedIn Corp., 273 F. Supp. 3d 1099, 1120 (N.D. Cal. 2017).

173. LAYTON ET AL., *supra* note 151.

174. *See supra* Part III.A.

175. Roach, *supra* note 107.

176. *See The Global, Socially Conscious Consumer*, NIELSEN (March 27, 2012), http://www.nielsen.com/us/en/insights/news/2012/the-global-socially-conscious-consumer.html (reporting that 46% of consumers say they are willing to pay extra from companies that support causes that they care about).

177. *See* Lessley Anderson, *Why Does Everyone Hate Monsanto?*, MOD. FARMER (Mar. 4, 2014), https://modernfarmer.com/2014/03/monsantos-good-bad-pr-problem/ (explaining how Monsanto has struggled to positively portray their technologies such as bioagriculture which has led to a negative public opinion).

178. *See* Gilpin, *supra* note 34 (discussing how Monsanto's negative image is largely due to the company's

data brands,[179] this statement reflects why Monsanto should advertise the social benefits of data technology to improve their brand. As such, farmers may be more willing to work with a company that is no longer tainted by negative publicity which would cause distrust in consumer confidence in a product involved with Monsanto.

V. CONCLUSION

This Note recommends that courts treat future cases regarding data ownership privacy differently than those regarding social media. This will enable farmers to freely negotiate data ownership rights with agricultural data aggregators. Agricultural data aggregators have the opportunity to improve their public image by stressing the societal benefits of agricultural data which will cause farmers to be more likely to collaborate with these data aggregators.

This Note further confronts the difficulties posed by data ownership rights by outlining the concerns farmers have about the sensitivity of their data. Currently, whether agricultural data will be treated as a trade secret remains an open question among the courts.[180] However, this Note also emphasizes the many economic benefits that agricultural data provides to farmers.[181] Therefore, farmers and data aggregators alike must be cognizant of the many future legal challenges posed by data ownership. By being transparent about the many benefits, farmers and agricultural data providers will be able to forge a path that is beneficial for all parties.

lawsuits, aggressive lobbying tactics, and endorsement of controversial GMOs).

179. *Id.*

180. *Supra* Part III.

181. *Id.*