The Harms of Police Surveillance Technology Monopolies

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Introduction

Clicking, searching, and forecasting are becoming as important to everyday policing as watching, interviewing, and following.[3] Police today increasingly rely on surveillance, data collection, inference, and prediction technologies.[4] These technologies include information collection tools, like body cameras and license plate readers, and software that then analyzes collected information, like video analytics and predictive policing. All of these technologies rely on artificial intelligence and enormous amounts of digitized data. We refer to these tools broadly as "police surveillance technologies."[5]

These police surveillance technologies are developed and offered primarily by private companies.[6] Whether body cameras or prediction software,

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[3] Sociologist Gary Marx terms this the "new surveillance": the *See* GARY MARX, WINDOWS INTO THE SOUL: SURVEILLANCE AND SOCIETY IN AN AGE OF HIGH TECHNOLOGY 20 (2016) (explaining that "new surveillance" is the "scrutiny of individuals, groups, and contacts using technical means to extract or create information.".

[4] *See* Adam Satariano, *The Week in Tech: Companies Make their Pitch to the Police*, N.Y. TIMES (Feb. 7, 2020) (https://www.nytimes.com/2020/02/07/technology/the-week-in-tech-companies-make-their-pitch-to-the-police.html?searchResultPosition=12 (explaining that at the 2020 European Police Congress "the conversation is now dominated by technology.").

[5] Elizabeth Joh, *The Undue Influence of Surveillance Technology Companies*, 101 N.Y.U. L. REV. ONLINE 101 (2017) (discussing these technologies of data collection and analysis used by police departments but provided by private companies).

[6] *See, e.g.,* Hanna Bloch-Webha, *Visible Policing, Technology, Transparency, and Democratic Control*, 109 CALIF. L. REV. 917, 917 (2021) (noting that "new technologies

policing technologies are typically sold, licensed, or leased to law enforcement agencies. That means that some of the key questions about surveillance technologies used in policing today are controlled by private companies.[7] What kind of data should an algorithm use to predict a suspect's dangerousness? What kind of features should be part of a "smart" police camera?[8] While these issues influence how police conduct investigations, they are typically raised and resolved by technology vendors—not the police. This relationship between the private sector and law enforcement agencies raises concerns about hidden and undue influences on an important democratic function. Both the role of artificial intelligence (AI) in policing and the private sector's influence on the technology have recently drawn attention from policymakers and academics.[9]

These developments are driving another underappreciated change in policing: reliance on private vendors for data storage and analysis. In our data-driven world, the ability to *aggregate* and *manage* the services that collect and analyze information is critical. Police departments, like other employers and institutions, need platforms to manage data. Just as individual consumers rely on Apple's iOS or Google's Android system, police departments need a platform to help manage both the software and the data that is an essential part of policing today.

Integrating policing tools, data, and analysis into a single product is potentially useful, but it raises an issue that thus far has gone without serious scrutiny. If a single company should come to dominate the market for platforms, it would not only reap the economic benefits of a combined monopoly over many services and products but would also gain enormous

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of surveillance, often procured from or otherwise reliant on the private sector, tend to operate in opaque and unaccountable ways, augmenting police power while remaining free of meaningful oversight.").

[7] *Id.* at 954.

[8] Elizabeth E. Joh, *Beyond Surveillance: Data Control and Body Cameras*, 14 SURVEILLANCE AND SOCIETY 133 (2016).

[9] *See, e.g.*, Bloch-Webha, *supra* note 6, at 931; Andrew Ferguson, *Policing Predictive Policing*, 94 WASH. U. L. REV. 1112, 1144 (2017); Rebecca Wexler, *Life, Liberty, and Trade Secrets, Intellectual Property in the Criminal Justice System*, 70 STANFORD L. REV. 1343, 1420 (2018).

power over democratic policing. That company would effectively control the design, access, and availability of multiple police surveillance technologies without the transparency obligations of a government agency.

The threat of monopolization in police-surveillance technologies is real for at least two reasons. First, although many companies currently offer police-surveillance technologies and products, there are clear signs of concentration. The dominant body camera supplier, Axon Enterprise, Inc., was formerly known as TASER International, and remains the leading supplier of stun guns ("conducted electrical weapons," or "CEWs," in industry jargon).[10] Axon gained market share in part through its existing relationships with police departments developed through its sales of the Taser.[11] The overwhelming majority of American law enforcement agencies use Tasers,[12] making them so ubiquitous that the brand name has become synonymous with electronic stun guns. It has also become the leading supplier of body camera ("body-worn camera," or "BWC") systems to large police departments. A BWC system consists of cameras and integrated data-management software ("digital evidence management system," or "DEMS"), the latter supplied on a subscription basis. Although most of Axon's revenue still comes from sales of Tasers, most of its growth is in software as it shifts its focus in that direction.[13] Indeed, the company describes itself as "an enterprise software company that also happens to sell devices."[14] It is so dominant in the market for BWC systems that it is currently under investigation by the Federal Trade Commission (FTC) for

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[10] *See* Max Reyes & Crystal Kim, *Axon Says It's a Software Firm, But It's Tasers Still Dominate the News*, BLOOMBERG (July 14, 2020), https://www.bloomberg.com/news/articles/2020-07-14/axon-says-it-s-a-software-firm-but-taser-dominates-the-news (reporting that according to Axon, two-thirds of American police officers carry Tasers).

[11] David Gelles, *Taser International Dominates the Police Body Camera Market*, N. Y. TIMES (July 13, 2016), https://www.nytimes.com/2016/07/13/business/taser-international-dominates-the-police-body-camera-market.html ("There is no doubt that Taser has managed to use its longstanding relationships with police departments, which have used the company's stun guns for decades, to gain its early lead in the market for body cameras and related software.").

[12] STANFORD CRIMINAL JUSTICE CENTER, USE OF TASERS BY LAW ENFORCEMENT AGENCIES: GUIDELINES AND RECOMMENDATIONS 1 (2005).

[13] *See Id.*

[14] *See Id.*

possible antitrust violations.[15] Axon has developed a policing technology platform that integrates BWCs and a variety of other surveillance and data technologies to create a technological "ecosystem" for policing.[16] As of 2021, Axon's only serious competitor in the platform market appears to be Motorola Solutions, Inc.[17] Axon has leveraged its existing relationships with police forces to become the leading platform provider.[18]

Second, although each law-enforcement agency is gathering more data, sharing that data across agencies remains an obstacle because of incompatibility among agencies' data-management systems.[19] Cross-compatibility could be accomplished if competing platforms were to adopt uniform standards, and some technology developers reportedly view cross-compatibility and information-sharing capability as a competitive advantage.[20] However, other technology developers view incompatibility as a more profitable strategy. Axon, for instance, has reportedly pursued a "lock-in" strategy that increases a client's dependence on Axon and prevents them from adopting competitors' products. If the leading police-surveillance technology vendors fail to adopt a set of uniform data-sharing standards, agencies will have incentive to coalesce around the leading platform, which in turn could create a platform monopoly.

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[15] *See* FTC complaint against Axon cited *Section III. A.*

[16] In 2015, *See* Karen Weise, *Will a Camera on Every Cop Make Everyone Safer? Taser Thinks So*, BLOOMBERG (July 12, 2016), https://www.bloomberg.com/news/articles/2016-07-12/will-a-camera-on-every-cop-make-everyone-safer-taser-thinks-so (quoting Axon's CFO Dan Behrendt who told investors: "Our strategy is not to maximize the profits on the sale of the cameras but to get people into the ecosystem and on our service.").

[17] *Id.*

[18] Rich Duprey, *How Big is the Threat Axon Enterprise Faces for Motorola Solutions?* THE MOTLEY FOOL (Feb. 26, 2021) https://www.fool.com/investing/2021/02/26/how-big-is-the-threat-axon-enterprise-faces-from-m/ ("[C]ompetitors have been unable to mount a serious challenge to Axon because it created a comprehensive suite of product offerings that fully integrate with one another, creating an ecosystem that's difficult to leave.").

[19] *See* JOHN S. HOLLYWOOD & ZEV WINKELMAN, IMPROVING INFORMATION-SHARING ACROSS LAW ENFORCEMENT: WHY CAN'T WE KNOW? PRIORITY CRIMINAL JUSTICE NEEDS INITIATIVE3 (2015), available at: https://www.ojp.gov/pdffiles1/nij/grants/249187.pdf.

[20] *See Id* at 4-5.

This Article provides an overview of questions raised by a police-surveillance technology platform monopoly and discusses what the threat of a monopoly means for the current debate on police reform and oversight. Specifically, this Article attempts to highlight four implications of a police-surveillance technology monopoly. First, traditional antitrust enforcement mechanisms are unlikely to address how a monopoly influences policing. Second, the current regulatory efforts aimed at police technologies are unlikely to have much effect on this monopoly power. Third, a police-surveillance platform monopoly would also raise issues of access, cost, and fairness to the criminal justice systems. Finally, the potential dangers of monopolization show that questions about police accountability today demand different skills of lawyers, advocates, and scholars than the usual toolkit of constitutional criminal procedure and more recent technology bans.

If a single private firm controls the market for a police surveillance product, questions of product design—even those features that guide how police conduct investigations—are left primarily to that company. If that firm were to leverage that dominance to achieve dominance in other policing products, it would have even broader influence over police surveillance. In addition, once adopted through contract or license, a policing platform is unlikely to be easily exited by any of the thousands of police departments around the country.

Part I of this Article explains how police-surveillance technology vendors influence policing. Part II uses the example of Axon to illustrate why and how control over platforms are attractive for police-surveillance technology companies and harmful for democratic policing. Finally, Part III, makes normative assessments about law and policy that should interest advocates and scholars of police reform and oversight.

I. The Police as Consumers of Surveillance Products

Police surveillance technologies are ubiquitous. The police can gather vast quantities of information through body cameras, sensors, license plate readers, online monitoring, and countless other means of data acquisition.

Police can also tap into the vast reserves of information continuously collected by third parties through devices such as security cameras, internet-connected doorbell cameras, private license plate reader networks, and neighborhood watch apps.

All this data is useless until analyzed. While surveillance information was once pored over by human detectives, analyzing the enormous volume of data today is beyond human capacity. How does one sort through petabytes of video from hundreds of locations throughout a city to look for a particular person? How can all of the license plates captured by cameras be identified correctly?

The answer is automation—more precisely, the automated application of algorithms. Algorithms, in the most basic explanation, are instructions for how to act upon specified data sets and provide the building blocks of AI.[21] For instance, a predictive-policing algorithm uses historical crime data and other information to forecast when and where crime is likely to occur. Machine learning, a subset of AI, provides systems the ability to learn from experience without explicit programming.[22] Certain types of machine learning, like deep-neural networks, rely on thousands, or even millions, of processing nodes to achieve even more complex tasks.[23] Familiar applications of deep learning today are the natural language processing of voice assistants like Apple's Siri or Amazon's Alexa. In policing, many license plate reading technologies have abandoned conventional image-

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[21] Artificial intelligence refers broadly to the use of computers that resemble human thought processes. *See, e.g.,* EXECUTIVE OFFICE OF THE PRESIDENT, NATIONAL SCIENCE & TECHNOLOGY COUNCIL, & COMMITTEE ON TECHNOLOGY, PREPARING FOR THE FUTURE OF ARTIFICIAL INTELLIGENCE, 7 (2016) ("Although the boundaries of AI can be uncertain and have tended to shift over time, what is important is that a core objective of AI research and applications over the years has been to automate or replicate intelligent behavior.").

[22] *See* Harry Surden, *Machine Learning and Law*, 89 WASH. L. REV. 87, 88 (2014) (explaining that machine learning is a subcategory of artificial intelligence that ". . . involves computer algorithms that have the ability to 'learn' or improve in performance over time on some task.".

[23] Shankar Anathakrishnan, *Amazon Scientists Applying Deep Neural Networks to Custom Skill.* (July 22, 2020), https://www.amazon.science/blog/amazon-scientists-applying-deep-neural-networks-to-custom-skills.

recognition algorithms for neural network processes that identify cars with more accuracy.[24]

All these tools require technologies that police departments neither design nor produce. Most policing is local, and most local agencies lack the expertise or financial resources to develop their own surveillance technologies.[25] Private companies have eagerly responded to this dilemma, resulting in an outsourcing of basic policing functions. Law enforcement agencies now purchase hardware, such as body cameras and license plate readers, from private companies. They also contract with private companies for data storage and analysis services that utilize AI. For example, PredPol, Inc. (now called Geolitica) sells predictive-policing services to police departments. [26] Another service, Shotspotter, uses a system of sensors in public places that constantly listens for and identifies the time and location of gunshots to guide police response.[27] This interest in advanced technology is not only reserved for large, urban police departments.[28] The 2008 recession forced police departments of all sizes and in all locations to

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[24] *See, e.g.*, Tom Simonite, *AI License Plate Readers Are Cheaper-So Drive Carefully*, WIRED (Jan. 27, 2020), https://www.wired.com/story/ai-license-plate-readers-cheaper-drive-carefully/ (noting ALPR company Rekor has "made the technology more accurate by switching its conventional image-deciphering algorithms for the neural network technological that started the recent AI boom.").

[25] There are exceptions, such as Chicago's experiment with its controversial Heat List program, or the New York Police Department's partnership with Microsoft for its Domain Awareness System.

[26] *See, e.g.*, PredPol Predictive Policing Subscription Agreement with City of Milpitas, Oct. 13, 2013, available at: http://www.ci.milpitas.ca.gov/_pdfs/council/2013/090313/item_12.pdf.

[27] *See* Tara O'Neill, Q&A about ShotsSpotter— the Gunshot Detection System Used in Bridgeport, AP NEWS (Feb. 19, 2019), https://apnews.com/article/75e4031a936f4fecb929f816f6e9dc48; *See* also *Sacramento Extends Contract with ShotSpotter for Detection Technology*, (June 18, 2020), https://www.techwire.net/news/sacramento-extends-contract-with-shotspotter-for-detection-technology.html#:~:text=The%20Sacramento%20City%20Council%20this,three%20undisclosed%20locations%20through%202025.

[28] *See.* Shelley S. Hyland & Elizabeth Davis, *Local Police Departments, 2016:* Personnel, BUREAU OF JUSTICE STATISTICS (Oct. 2019), Local Police Departments, 2016: Personnel | Bureau of Justice Statistics (ojp.gov) (noting 48% of all local police departments employed less than the equivalent of 10 full-time sworn officers).

consider whether technology adoption might improve efficiency while reducing workforce costs.[29]

The privately developed and controlled nature of these products and services has proven to be a challenge to police oversight and regulation. First, the private sector decides what tasks these tools perform and how they perform them.[30] Second, police procurement has traditionally been the subject of little public interest and has only recently become a focus of privacy and civil liberties groups.[31] Third, police departments have sometimes asserted that details about these tools are proprietary and protected as trade secrets or, alternatively, cannot be disclosed because of nondisclosure agreements and other contractual obligations.[32] These nondisclosure agreements between the police and private companies have obscured attempts by defense lawyers and journalists to discover details about novel surveillance technologies.[33]

The growing regulatory and academic attention to these *tools*, however, overlooks another problem: private vendors' interest in developing policing *platforms* that integrate hardware, software, and data management.[34] Police reports and records must be organized and accessible in ways that satisfy administrative and legal standards. This is challenging enough with respect to traditional written records, fingerprints, and photographs; it has become more difficult as police generate larger quantities and varieties of data.

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[29] Brian A. Jackson, Victoria A. Greenfield, Andrew R. Moral, & John S. Hollywood, *Police Department Investments in Information Technology Systems*, RAND CORPORATION 1 (2014), https://www.rand.org/content/dam/rand/pubs/research_reports/RR500/RR569/RAND_RR569.pdf.

[30] Joh, *supra* note 8, at 133.

[31] *See, e.g.,* Catherine Crump, *Surveillance Policy Making by Procurement*, 91 WASH. L. REV. 1594, 1615 (2016).

[32] Joh, *supra* note 8, at 135.

[33] *See Id.*

[34] Steve Lohr, *The Power of the Platform at Apple*, N.Y. TIMES (Jan. 9, 2011), https://www.nytimes.com/2011/01/30/business/30unbox.html#:~:text=The%20combination%20of%20hardware%2C%20software,raises%20a%20barrier%20to%20competitors ("The combination of hardware, software and services is what corporate executives, economists and analysts call a platform.").

Police body cameras are the prime example. Body cameras can easily generate petabytes of video data, creating significant data management challenges. Every officer who wears a body camera generates an immense amount of data. For a midsize city like Oakland, California, that translates to between seven and eight terabytes of body camera video each month.[35] That data must be securely stored and protected against criminal interference, accidental deletion, and chain-of-custody questions.[36] Access to the video may be required for criminal cases, officer disciplinary proceedings, or public records requests. The videos may need to be tagged or redacted for release. The body camera software must be periodically updated for improvements, corrections, or new applications, such as facial recognition (AI software that identifies faces in surveillance photos and video). However, most police departments do not have the capacity to even store or review video data.[37] A police technology platform integrates and streamlines this constellation of tasks.

II. Surveillance Technology Platforms

As the market for individual police technologies continues to grow, there are powerful incentives for private companies to develop platforms that can serve as a one-stop shop for hardware, software, and data. The FTC has recognized that the market for BWC systems, a significant and growing police technology, has an extremely high level of concentration.[38] BWC systems are an important component of these platforms. A private firm that can convince its customers of the benefits of its own platform will enjoy

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[35] Mike LaCabe (@mlacabe), Twitter, (Jan 3, 2019, 7:34 PM), https://twitter.com/mlacabe/status/1081015930044350464.

[36] *See generally,* CJIS Information Security Officer, *Criminal Justice Information Services (CJIS) Security Policy*, U.S. DEP'T OF JUST, (June 1, 2020), https://www.fbi.gov/services/cjis/cjis-security-policy-resource-center (establishing minimum security requirements for the storage of criminal justice information).

[37] *See* Ronnie Wendt, *Video Evidence: Cloud vs. On-Site Storage*, OFFICER, (Apr. 18, 2019), https://www.officer.com/command-hq/technology/article/21071719/video-evidence-cloud-vsonsite-storage (explaining that in 2019, the Spokane, Washington Police Department was adding 2.07 terabytes of video every 30 days).

[38] *See* FTC Complaint, Axon Enter., Inc., Docket No. D9389, (Jan. 3, 2020), available at https://www.ftc.gov/system/files/documents/cases/d09389_administrative_part_iii_-_public_redacted.pdf [hereinafter Complaint].

considerable advantages over its competitors. Doing so would also raise questions about the ability of conventional police oversight mechanisms to work properly. Using Axon as an illustration, this Part examines some of the issues that arise when police surveillance companies turn to platform development. Axon has been particularly vocal about the benefits of developing a police technology platform. Acknowledging these benefits, this Part then turn to the potential harms that arise if a company like Axon becomes the default platform in American policing.

A. From Body Cameras to a Police Data Ecosystem

Axon's rapid rise to meet police surveillance technology demands best illustrates the platform monopoly problem. While some police departments adopted body cameras in the early 2000s, it was the 2014 fatal shooting of Michael Brown by Ferguson, Missouri police officer Darren Wilson that prompted a national change in expectations about the technology. In the midst of nationwide protests calling for police reforms, Brown's family called for a campaign "to ensure that every police officer working the streets in this country wears a body camera."[39] The Justice Department responded with body camera initiatives and funding, and police chiefs embraced the change.[40]

Thanks to its dominance of the stun-gun market, Axon was uniquely positioned to benefit from this interest in police surveillance technology. While other companies offer body cameras, Axon claims in its public Securities and Exchange Commission (SEC) filings that it has a "customer relationship" with 17,000 of the 18,000 law enforcement agencies in the

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[39] Josh Sanburn, *The One Battle Michael Brown's Family Will Win*, TIME, (Nov. 25, 2014), https://time.com/3606376/police-cameras-ferguson-evidence/ (quoting Brown family public statement).

[40] *See, e.g.,* Pew, Body Cameras May Not Be the Easy Answer Everyone Looking For, Jan. 14, 2020, at https://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2020/01/14/body cameras-may-not-be-the-easy-answer-everyone-was-looking-forhttps://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2020/01/14/body cameras-may-not-be-the-easy-answer-everyone-was-looking-for.

United States.[41] It further boasts that it "has dedicated sales representatives for the 1,200 largest agencies, which account for 70% to 80% of U.S. law enforcement patrol officers."[42]

The FTC has identified Axon as the leading maker and seller of BWCs and DEMS and analyzed the two together as a single product: a "BWC *System*." As described by the FTC, DEMS provide centralized storage of body camera data and protect the chain of custody while also enabling redaction of images (e.g., obscuring bystanders' faces), and facilitating the sharing of evidence with prosecutors.[43] According to Tom Guzik, President of Getac Video Solutions, Inc., a provider of BWC systems, a DEMS is an "integral part of any body worn camera system" and "[m]ost competitors sell their body worn cameras as a package with their digital evidence management system, which is paid for as an ongoing subscription."[44]

Axon Evidence (aka Evidence.com) is a cloud-based DEMS service that purports to integrate a number of data storage and analysis functions.[45] As described in Axon's marketing materials, Evidence.com includes a body camera DEMS and has additional capabilities: it can collect and store data from any device and in any file format, including automatic uploading from Axon hardware; expand storage capacity; provide database management, including automated metadata tagging of video files; search and retrieve data; share data with other parties, such as prosecutors; automate evidence retention procedures; and "correlate" computer-aided dispatch (CAD) or records-management system (RMS) data with videos.[46] To use an Axon bundle, patrol officers dock their body cameras at the end of their shifts.

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[41] AXON ENTER., INC., SEC. & EXCH. FORM 10-K6 (2020), available at: https://www.sec.gov/ix?doc=/Archives/edgar/data/1069183/000155837021001873/axon-20201231x10k.htm.
[42] Id.
[43] Complaint, *supra* note 38 at *1.
[44] Motion for in Camera Treatment, Exhibit B-7 at 1, Axon Enter., Inc., Docket No. 09389, (2020) available at: https://www.ftc.gov/system/files/documents/cases/d09389_3dp_getac_video_solutions_inc_mtn_for_ic_treatmentpublic599499.pdf.
[45] *See generally* GLOBAL AXON https://global.axon.com/products/evidence.
[46] *See id.*

The data is then uploaded to Axon's cloud storage and readied for AI-enabled tagging or redaction.[47]

Axon has expanded its integrated product and service offerings beyond body cameras and video-data management, offering police departments a broad and highly integrated hardware and software system.[48] Specifically, Axon offers an integrated "officer safety plan," priced per officer:

- unlimited cloud data storage for body camera video, in-car video, interview video, CCTV footage, photographs, audio, and documents;[49]
- software for automated redaction,[50] automated tagging,[51] automated transcription,[52] and real-time streaming for all linked hardware;
- hardware, including body cameras and docks to upload to the cloud, "smart" Tasers, in-car cameras, and drones.[53]

All of these products and services—the hardware, the software, and the cloud storage—are offered together as an integrated platform.[54] In its

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[47] *See id.*

[48] *See, e.g.*, AXON ENTER., *supra* note 41, at 4-5.

[49] BEYOND CJIS: ENHANCED SECURITY, NOT JUST COMPLIANCE, AXON, available at: axon-2/a120c9a7-739e-4a55-aba7-72ed75156064_security+white+paper.pdf (prismic.io) (last visited Feb. 3, 2022) (The product is called Evidence.com).

[50] *Redaction Assistant*, GLOBAL AXON, https://global.axon.com/redaction-assistant (last visited Feb. 3, 2020).

[51] *Axon Evidence*, AXON, https://www.axon.com/products/axon-evidence (last visited Feb 3, 2021).

[52] Axon *Your Evidence Management System is Missing Transcription*, AXON, https://www.axon.com/resources/axon-auto-transcribe/your-evidence-management-system-is-missing-transcription (last updated Oct. 8, 2020) ("With a click in Axon Evidence, you can have an auto-transcript within minutes as opposed to hours or days, making transcription accessible for every case and every piece of digital evidence.").

[53] *See Product Catalog*, AXON, https://www.axon.com/products (last updated 2021).

[54] *See, e.g.*, Transcript for Axon Enterprise, Inc. Q3 2019 Earnings Call, AXON 4 (Nov. 7, 2019), available at: https://s22.q4cdn.com/113350915/files/doc_financials/2019/q3/Q3-2019-Earnings-Call_Corrected-Transcript_2019-11-08-03-50-09.pdf (quoting Jeff Kunins, "One of the most exciting things about Axon is our opportunity to create software devices, cloud services, SaaS subscriptions and mobile apps that all work together to create a flywheel effect of customer loyalty and long-term value.".

Securities and Exchange Commission (SEC) filings, the company divides its business into "two reportable segments:" TASER brand stun-guns in one segment and "Software and Sensors" in the other. Axon describes the latter as "fully integrated hardware and cloud-based software solutions that enable law enforcement to capture, securely store, manage, share and analyze video and other digital evidence."[55] The elevation of the company's ambitions is summed up in its explanation for its 2017 name change from "TASER International" to "Axon Enterprise": "An axon is a nerve fiber that serves as the primary communication link in a nervous system — similarly, *we see ourselves as building the nervous system for public safety*."[56]

In principle, a police department could choose to purchase certain services, such as body cameras and their data-management services, from one vendor, and contract with another vendor for other services, such as drones. But Axon's integrated business model encourages police departments to source such products and services from a single vendor. While Axon still sells standalone products, contracts with multi-year obligations are an increasing share of its revenue. In 2016, thirty-four percent of Axon's total $268 million in revenue derived from "subscription bundles." By 2019, subscriptions accounted for seventy-one percent of its $531 million in revenue.[57] One analyst has estimated that Axon's gross profit margins from its cloud-based storage were more than three times that of its hardware.[58]

Axon's business model no longer emphasizes the sale of body cameras or electric stun-guns, but five-year contracts for its officer safety plan subscriptions.[59] The bundle offers police departments "seamless

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[55] AXON ENTER., INC., *supra* note 41, at 4.
[56] *Id.*
[57] *Investor Presentation*, AXON 7, 21 (Nov. 2020), available at: Axon-Investor-Deck-Nov-2020.pdf (investorroom.com).
[58] Lucas Mearian, *As Police Move to Adopt Body Cams, Storage Costs Set to Skyrocket*, COMPUTERWORLD (Sept. 3, 2015), https://www.computerworld.com/article/2979627/as-police-move-to-adopt-body-cams-storage-costs-set-to-skyrocket.html.
[59] *See, e.g.*, *Investor Presentation supra* note 57, at 5 ("At Axon, our north star is to drive adoption of our high value integrated bundle which marry our hardware devices and cloud services into one monthly recurring payment."; *see also* Jimmy Jenkins, *In the Police Body Camera Business, the Real Money's on the Back End,* MARKETPLACE

networking"[60] and promises investors "market dominance."[61] In 2020, Axon's most expensive bundle cost $239 per officer per month over a minimum five-year subscription term.[62]

Adopting a common platform for collecting and assessing records, communications, and intelligence can promote standardized responses, help police commanders compare and share data, and help the department review officer performance and allegations of misconduct. Unquestionably, there are potential benefits to this kind of integration and automation. A 2018 study of the Baltimore Police Department conducted by the National Police Foundation found a system plagued with issues, including "siloed systems" that hampered the integration of information, and an RMS "based entirely on manual data entry, requiring an extraordinary amount of time and staffing."[63] Moreover, the widespread adoption of a single technology platform by local law enforcement agencies around the country could produce rich data not just for investigative purposes but for assessing patterns of misconduct, identifying inefficient use of officers, and improving responses in complex situations.

Moreover, the average police department lacks the technological expertise to address all that is necessary to maintain, store, and analyze all the information they are expected to collect. About half of the roughly 12,000 local police departments in the United States employ fewer than ten full-

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(Apr. 18, 2017), https://www.marketplace.org/2017/04/18/police-body-camerabody camera-business-real-moneys-on-back-end/; Maggie Overfelt, *Taser-maker Axon is Looking a Lot More Like Apple, Amazon, and so it the Future of Law Enforcement*, CNBC (Dec. 12, 2019), https://www.cnbc.com/2019/12/12/taser-maker-axons-amazon-alexa-exec-is-future-of-law-enforcement.html.

[60] *Do More with Less (Axon Inc.)*, VIMEO, https://vimeo.com/416419543 (last visited Feb. 4, 2022).

[61] *Investor Presentation*, Axon 2, 47 (Aug. 2019).

[62] Brett Schafter, *How the Company Behind TASER Guns is Becoming a SaaS Powerhouse*, MOTLEY FOOL (Mar. 3, 2021), https://www.fool.com/investing/2021/03/03/how-company-behind-taser-becoming-saas-power/.

[63] WENDY HARN, BLAKE NORTON, JENNIFER ZEUNIK, & JOYCE Iwashita, BALTIMORE POLICE DEPARTMENT, TECHNOLOGY RESOURCE STUDY\ 24, 69 (2018), available at https://www.baltimorepolice.org/sites/default/files/General%20Website%20PDFs/BPD_Final_Technology_Inventory_Study_06-21-18.pdf.

time sworn officers.[64] While some police departments insist upon "on-premises" data management for cost or control reasons, a company offering a software-as-a-service (SaaS) cloud platform offers advantages. Using hardware and software from a single vendor avoids compatibility problems. The cloud vendor relieves the police agency of a significant number of routine information-technology tasks; a private company can also focus on continuous improvements in technology and security—and at scale—in ways that a single police force cannot.

Police departments—particularly large ones—may have no real choice between managing all these issues on their own versus subscribing to a single private platform service.[65] The more a department requires video for its officers in response to accountability concerns, the more data is generated. Police departments whose officers engage in more traffic stops and street encounters generate more data. Higher resolution video, which helps both for evidentiary and accountability concerns, generates more data.[66] Compliance with a city or state's data retention laws further increases the amount of data.

B. The Costs of a Police-Surveillance Technology Platform Monopoly

If the police can attain advantages from a dominant platform that helps them collect, store, analyze, and distribute information, what are the potential risks? Individual surveillance technologies may harbor serious and documented problems. Facial recognition technology, for instance, can exhibit high rates of misidentification based on race, ethnicity, and gender.[67]

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[64] SHELLEY S. HYLAND & ELIZABETH DAVIS, LOCAL POLICE DEPARTMENTS, 2016: PERSONNEL 3 (2019) (noting that "about half of all local police departments employed less than the equivalent of 10 full-time sworn officers").

[65] Wendt, *supra* note 37 (quoting Axon Vice President of Digital Evidence and Devices stating, "Our most popular storage policy is the unlimited package.").

[66] Jason Kotowski, *Money, Storage Primary Obstacles in Police Body Cameral Implementation*, GOV'T TECH. (Mar. 7, 2016), https://www.govtech.com/em/safety/Police-Body-Cam-Installation.html (referencing Kern County sheriff's statement that video in 1080p, as opposed to 720p resolution, roughly twice as much data is produced).

[67] *See, e.g.*, Steve Lohr, *Facial Recognition is Accurate, if You're a White Guy*, N.Y. TIMES, (Feb. 9, 2018), https://www.nytimes.com/2018/02/09/technology/facial-

A platform that combines hardware, software, and storage, however, poses its own risks. Here, we identify concerns arising if a single company were to provide a police-surveillance technology platform to a majority of police departments.

First, a platform's subscription terms may allow the vendor to exploit police data for commercial purposes. For example, while police departments retain ownership of their data under Axon's contracts, the company asks them to share data for AI training purposes.[68] The vendor can use this data to develop new products and services, contributing to the dominance of the company's platform. The more data a police department creates from its subscribed services, the more valuable that data is to the vendor's development team.[69] Consider a police department that has contracted with one company for most of its hardware, its data storage, and the software necessary to assess that data. Data collected about everything a police department can be monetized for the company's own future products. Axon, for example, touts its massive data trove to its investors.[70] In a 2018 earnings call, Axon's CEO observed of its records-management software:

> We see the real value in Records is in the data, not the form-filling software. We have the largest data set in public safety. We're now at over 40 petabytes—that's 40 million gigabytes. Aggregating the text records in the same system as the video means that we can create a uniquely powerful data set for our AI team. . . .[71]

Axon can monetize information it learns from police departments in another way: it asserts intellectual property rights not only to its software, products

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recognition-race-artificial-intelligence.html (citing work of Joy Buolamini finding error rates of up to 35% for "images of darker skinned women").

[68] *See Axon Announces First CJIS Compliant Artificial Intelligence Training Center*, AXON (May 21, 2018), https://investor.axon.com/2018-05-21-Axon-Announces-First-CJIS-Compliant-Artificial-Intelligence-Training-Center.

[69] *Id.*

[70] *Investor Presentation*, *supra* note 57, at 11.

[71] Axon Enterprise, Inc., Third Quarter 2018 Earnings Call, Nov. 6, 2018, https://s22.q4cdn.com/113350915/files/doc_financials/2018/q3/Q3-2018-Earnings-Call-Transcript.pdf.

and services, but also to all "suggestions" the client may make to Axon.[72] This gives Axon free advice on how to improve its products and prevents police departments from making the same suggestions to other vendors.

Second, multi-year contracts for a police-surveillance technology platform may be easy to enter but difficult to exit. In April 2017, Axon announced its free body camera offer: any American police department could try out its cameras for one year without obligation. That offer, however, was itself a bundle: the trial included cameras and one-year subscriptions to its cloud-based services.[73] At the time, there were roughly fifty body camera vendors, most of which subcontracted with Microsoft for cloud data storage.[74] Axon cameras, however, require the use of Axon's proprietary software;[75] thus departments that received the "free" Axon cameras could use them in the long term only if they became long-term subscribers to Axon's DEMS. Body cameras themselves are not nearly as profitable as recurring subscription revenue.[76]

Adopting Axon's proprietary, integrated package of hardware and data-management software might yield significant benefits. Once committed to a proprietary platform, however, a police department would find it costly to switch to a new vendor, even if Axon's subscription costs later increased.[77] Switching costs would include going through the government bidding and procurement process, replacing the hardware and DEMS, and retraining

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[72] *See e.g.*, ALEX D. MCINTYRE & DARIN SCHINDLER, STAFF REPORT—APPROVAL OF AXON CONTRACT—BODY WORN VIDEO FOR POLICE OFFICERS 6 (2020), available at: 8F (ca.gov).

[73] Cyrus Farivar, *Taser Stuns Law Enforcement World, Offers Free Body Cameras to all US Police*, ARS TECHNICA (Apr. 5, 2017), https://arstechnica.com/tech-policy/2017/04/taser-announces-free-body-cameras-cloud-storage-to-all-us-cops-for-a-year/.

[74] Jimmy Jenkins, *In the Police Body Camera Business, the Real Money's on the Back End*, MARKETPLACE (April 17, 2017), https://www.marketplace.org/2017/04/18/police-body-camera-business-real-moneys-on-back-end/.

[75] *Id.*

[76] Mearian, *supra* note 58.

[77] *See* William Alden, *There's A Fight Brewing Between the NYPD and Silicon Valley's Planatir*, BUZZFEED NEWS (June 28, 2017), https://www.buzzfeednews.com/article/williamalden/theres-a-fight-brewing-between-the-nypd-and-silicon-valley.

personnel. An executive of Safariland LLC, then Axon's primary competitor in the body camera market, thus described Axon's nominally free camera bundle as a "Venus flytrap."

Axon has used other "Venus flytrap" tactics: in at least one instance, it offered video recording systems for interview rooms to an existing police department customer at no charge.[78] While the systems, worth $71,000, were nominally "free," they were linked to Axon's subscription-based DEMS and were provided only on the condition that the department renew its existing BWC services contract for five years.[79] As the Safariland executive stated, "there's no such thing as free . . . there's a whole back end to it that has implementation costs and makes it very difficult to switch out of . . . ."[80]

For complex ongoing cases, especially those involving allegations of officer misconduct, the police department must retain and be able to analyze video data for years.[81] The former platform provider would have no incentive to help transfer data or otherwise help with the police department's transition.[82] Even if the department retained ownership of the video data itself, a platform switch would require either converting the old video to a file format compatible with the new vendor's DEMS or paying for both the new DEMS to analyze new video *and* for the old DEMS to access old video. The latter choice would likely be prohibitively expensive.[83]

Rising police platform subscription costs may also affect police priorities in unexpected ways. A multi-million-dollar data subscription commits a department to expenses that cannot be devoted to other policing priorities. The platform can incentivize adoption of these additional services through steep discounts that take advantage of existing police customer reliance on

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[78] MCINTYRE & SCHINDLE, *supra* note 72, at 2.
[79] *Id.*
[80] Jenkins, *supra* note 74.
[81] Motion for In Camera Treatment, *supra* note 44, at 2.
[82] *See* Alden, *supra* note 77.
[83] Motion for In Camera Treatment, *supra* note 44, at 2.

the platform. Increasing sources and quantities of data will increase demands for data storage and increase potential applications for that data.

Axon's products are again illustrative. A police department that signed up for Evidence.com when it was introduced in 2009 was paying for a body camera cloud storage service. In 2015, an Evidence.com subscription could include Axon Signal, which allows police administrators to remotely configure when Axon-related cameras begin recording without relying on manual operation by police officers.[84] In 2018, Axon offered those customers Axon Records, an RMS that draws upon information collected from Axon body cameras and Tasers and that is stored on Axon Evidence.[85] That same year, it introduced Axon Air, a service that offers police drones that are connected to its Evidence.com platform.[86] If police departments get locked in to costly data subscriptions, they may feel pressure to adopt new services that promise to utilize that data to enhance crime prevention and detection.

III. Observations on Police Surveillance Technology Monopolies

The 2020s have generated intense interest in regulating police technologies. None of the prominent ways of regulating these technologies, however, squarely address the concerns outlined in this Article. This Part addresses some of the regulatory measures that have arisen in response to police

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[84] *Signal Configuration*, MY AXON, https://my.axon.com/s/article/Signal-Configuration?language=en_US#:~:text=Signal%20Configuration-,Axon%20Signal%20is%20a%20technology%20that%20alerts%20your%20Axon%20Body,Fleet%20cameras%20to%20begin%20recording.&text=Evidence.com%20administrators%20can%20configure,vehicle%20cameras%20for%20their%20agency. ("Axon Signal is a technology that alerts. . . [body] cameras to begin recording [by administrators].").

[85] *Axon's New RMS Solution, Axon Records, Now Being Deployed by Fresno Police Department*, AXON (Oct. 1, 2019), https://www.axon.com/news/axons-new-rms-solution-axon-records-now-being-deployed (explaining that police in Fresno, California were the first to adopt Axon Records).

[86] *Axon Enterprise Media Press Kit* AXON, https://axon-2.cdn.prismic.io/axon-2/93dca185-9d0b-4b87-b1a3-3bdb887dff57_MediaPressKit_AxonEnterprise_2021+%281%29.pdf (last updated Jan. 2021) (setting out timeline of product rollouts)

surveillance technologies. Unfortunately, these measures fail to address platform dominance as a distinct issue.

A. The Limits of Antitrust Approaches

Antitrust law is the standard tool to combat economic overconcentration, but it may be ineffective as applied to police-surveillance technology platforms. This is because contemporary competition law has moved away from treating economic concentration as inherently bad. Instead, antitrust doctrine tends to focus narrowly on "consumer welfare:" low prices and related benefits such as product quality and variety. Harm to consumer welfare violates antitrust law if it results from a merger or from conduct designed merely to eliminate competitors rather than from competitive forces such as increased demand, superior products, or increased production costs. [87]

In other words, current antitrust law is not aimed at the lack of competition *per se.* Rather, it focuses on one subset of its potential harms and tends to ignore others. It also considers countervailing economic benefits and the method by which market dominance is achieved. Thus, a monopoly (or collusion among firms) is not necessarily illegal. Reducing competition by monopoly or collusion sometimes produces efficiency gains that increase consumer welfare and courts may permit concentration in such cases.[88] A monopoly in the surveillance-platform market, for example, could conceivably increase the consumer welfare of police departments. While it would reduce product choice, the resultant standardization and integration within and among law-enforcement agencies might increase product quality

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[87] *See*, Aspen Skiing Co. v. Aspen Highlands Skiing Corp., 472 U.S. 585, 597 (1985) ("We are concerned with conduct which . . .does not benefit consumers by making a better product or service available —or in other ways—instead has the effect of impairing competition.").

[88] United States v. Microsoft Corp., 253 F.3d 34, 95 (D.C. Cir. 2001) (holding on narrow grounds that per se rule proscribing monopolies was inapplicable to Microsoft because the effect of its behavior was not anticompetitive).

and reduce net price. (Of course, such benefits would be difficult to prove, but courts may nonetheless consider them.)

If a platform achieved market dominance through competitive means, or if its dominance increased police departments' consumer welfare, then it could survive antitrust analysis. However, police departments are not the only interested parties in the surveillance-technology market, and their budgets are not the only relevant concern. Allowing a single private firm to control technology that impacts the community's safety, liberty, and privacy raises significant democracy concerns that standard antitrust analysis fails to account for. The federal government's approach to private vendors of space-launch services illustrates the limits of antitrust law. In 2005, Boeing and Lockheed proposed forming the United Launch Alliance (ULA), a joint venture for purposes of providing space-launch services to the U.S. government. At the time, the two companies were the only ones capable of providing so-called "medium-to-heavy" launch services. The leading potential competitor, SpaceX, had not yet conducted a successful launch. The market had considerable barriers to entry: the start-up costs were (and remain) immense. In addition, new entrants face a Catch-22: the government is traditionally hesitant to contract with companies it has not contracted with before.

The FTC expressed concern that the ULA joint venture would create a monopoly with "significant" negative effects on price and other measures of competition. The Department of Defense (DOD) agreed with Boeing and Lockheed's claims that the collaboration would improve the reliability of launches. The FTC thus approved the joint venture in 2007. Both agencies focused narrowly on the "consumer welfare" concerns of orthodox antitrust law. Neither agency appears to have considered the democratic concerns involved in giving a single private firm outsized influence over space-related scientific and national security issues. Similarly, standard antitrust analysis of concentration in the surveillance-technology market would focus on its effects on price, quality, and choice. Even if those effects are positive, however, concentrated control of these technologies in private hands raises democratic concerns about police accountability and transparency.

As mentioned previously, federal antitrust regulators have already expressed concern about Axon's dominance in the market for integrated police technology products. Unsurprisingly, they have framed the issue in standard consumer-welfare terms. In 2018, Axon acquired and merged with its closest competitor in the market for BWC systems, Safariland LLC's VieVu body camera division. In January 2020, the FTC filed an administrative complaint against Axon and Safariland accusing them of violating antitrust law by conducting a merger that reduced competition and entering into broad agreements prohibiting Safariland from competing with Axon.[89] As of January 2022, the administrative trial is stayed pending Axon's constitutional challenge to the FTC's authority in the Supreme Court. Axon was already the number one supplier of BWC systems and grew even larger upon acquiring VieVu. If Axon survives the FTC challenge and successfully parlays its dominant position in BWC systems into a similarly dominant position in integrated platforms, its influence over police work would be significantly magnified.

The FTC alleges that the merger violated Section 7 of the Clayton Act, which prohibits corporate combinations whose effect "may be substantially to lessen competition."[90] The FTC further asserts that Axon and Safariland entered into anticompetitive agreements in connection with the merger. Safariland agreed not to compete with Axon in body cameras, DEMS, and products and services unrelated to the merger: dashcam products and services, surveillance-room cameras and services, records-management systems, and stun-guns.[91] Safariland also agreed not to solicit Axon's clients with respect to any business, each company agreed not to recruit the other's employees,[92] and Axon agreed to acquire its stun-gun holsters exclusively from Safariland for ten years.[93]

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[89] Complaint, *supra* note 38, at *1

[90] The Clayton Antitrust Act, 15 USC § 18 (2022).

[91] Complaint, *supra* note 38, at *8-*9.

[92] *Id.* at *8.

[93] *Id.* at *4.

The FTC complaint alleges that the Axon-VieVu merger harmed consumer welfare with respect to price and quality.[94] Prior to the merger, VieVu had been Axon's "closest competitor in the market for BWC Systems sold to large, metropolitan police departments" and VieVu "aggressively challenged" Axon in that market.[95] Axon expressly recognized that competition from VieVu had led to lower prices and improved products.[96] VieVu had obtained contracts with "several large, metropolitan police departments," including the NYPD, by submitting bids "substantially below" Axon's.[97] After VieVu won the NYPD contract, the companies entered a "price war," which included Axon offering 1,000 free cameras to the NYPD and free one-year BWC contracts to every police department in the United States.[98]

The FTC alleged that the merger will "entrench . . . Axon's already dominant share of the relevant market and . . . significantly increase market concentration.[99] Moreover, according to the FTC, the reduction in competition had already begun to affect price and quality. Since the merger, Axon had imposed "substantial price increases" on its products, made VieVu products less available, and stopped developing VieVu hardware and software.[100] While merger regulation takes into account economic efficiencies that may result from consolidation, Axon admitted that it had not identified any efficiencies when deciding to undertake the merger.[101] Axon stated that one reason it acquired VieVu was to obtain its NYPD BWC contract,[102] which Axon had been unable to obtain through competitive bidding.

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[94] *Id.* at *7-*8.
[95] *Id.* at *1-*2.
[96] *Id.* at *2.
[97] *Id.*
[98] *Id.* at *2.
[99] *Id.* at *3. (According to the FTC, the post-merger market concentration would be sufficient to make the merger presumptively unlawful under the 2010 DOJ/FTC Merger Guidelines. Using the Herfindahl-Hirschman Index (HHI), concentration would increase by more than 200 points and exceed 2500 points.).
[100] *Id.*
[101] *Id.* at *10.
[102] *Id.* at *3.

Axon responded to the complaint not by defending on the merits, but by filing a motion asking the district court to enjoin the administrative proceeding on constitutional grounds.[103] A sympathetic appellate judge later stated that Axon's suit "challenges the very existence of the Federal Trade Commission. . . as unconstitutional."[104] Axon alleged that the FTC Act, the statute that created the FTC, violates the constitutional separation of powers because it combines enforcement, rulemaking, and adjudication in a single agency.[105] Axon further alleged that the Act's provisions protecting administrative law judges from termination encroach on the President's Article II authority.[106] Finally, Axon asserted that the uncodified, opaque way the FTC and Department of Justice choose which merger cases to pursue (the "clearance process") violates equal protection and due process clauses of the Fifth Amendment.[107] The district court dismissed Axon's suit for lack of jurisdiction, holding that Axon had to go through the administrative process and raise its claims there before it could bring a court challenge.[108] The FTC Act does not expressly mention district court jurisdiction over FTC matters: its only explicit mention of judicial review grants the Courts of Appeal exclusive jurisdiction to review FTC cease-and-desist orders. According to the district court, this provision implicitly denies district courts jurisdiction to hear Axon's claims.[109] According to the court, Axon could raise its constitutional objections in the FTC proceeding, and if the FTC were to issue a cease-and-desist order against the merger, Axon could appeal and reassert its constitutional claims in the Court of Appeal.[110]

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[103] Axon Enter., Inc. v. FTC, 452 F. Supp. 3d 882, 886 (D. Ariz. 2020).
[104] Axon Enter., Inc. v. FTC, 986 F.3d 1173, 1189 (9th Cir. 2021) (Bumatay, J. concurring in in part).
[105] Federal Trade Commission Act, 15 U.S.C. §§ 41-58 (2022).
[106] 452 F. Supp. 3d at 885.
[107] *Id.* at 894.
[108] *Id.* at 899.
[109] *Id.* at 886.
[110] *Id.* at 895.

Axon appealed the dismissal to the Ninth Circuit[111] and the FTC administrative trial was stayed.[112] Meanwhile, Axon and Safariland agreed to rescind their noncompetition agreement. Safariland agreed to a settlement with FTC requiring it to obtain FTC permission before signing any future noncompetition agreements with Axon.[113]

In 2021, a Ninth Circuit panel upheld the district court's decision.[114] In January 2022, the Supreme Court granted Axon's petition for certiorari on the jurisdictional issue:[115] whether the FTC Act implicitly denies district courts jurisdiction to hear constitutional challenges to the FTC.[116] If Axon prevails, it will then almost certainly refile its constitutional challenges in the district court. That, and subsequent appeals, are likely to delay a finding on the merits for another few years. If the constitutional challenge succeeds, the blow to the FTC would obviously have consequences far beyond this case. Indeed, it could affect other agencies as well.

If the constitutional challenge fails and the administrative trial goes forward, the FTC will have to prove that the merger may have anticompetitive effects. Even if the FTC administrative proceeding makes such a finding, it will not necessarily unwind the merger. Unwinding is always an extreme remedy. The longer the delay in reaching the merits, the more integrated

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[111] Order, Axon Enter. Inc., Docket No. D9389, at *1 (Oct. 8, 2020), https://www.ftc.gov/system/files/documents/cases/d09389_commission_order_staying_hearing.pdf.

[112] *VieVu's Former Parent Company Safariland Agrees to Settle Charges that it Entered into Anticompetitive Agreements with Body-Worn Camera Systems Seller Axon*, Fed. Trade Comm'n (Apr. 17, 2020), https://www.ftc.gov/news-events/press-releases/2020/04/vievus-former-parent-company-safariland-agrees-settle-charges-it.

[113] Decision and Order Axon Enter. Inc., Docket No. D9389, at *1 (Apr. 17, 2020), available at: https://www.ftc.gov/system/files/documents/cases/d09389safarilanddecisionorder.pdf; *VieVues Former Parent Company Safariland Agree to Charges that hit Entered into Anticompetitive Agreements with Body-Worn Camera Systems Seller Axon*, FED. TRADE. COMM'N, (Apr. 17, 2020), https://www.ftc.gov/news-events/press-releases/2020/04/vievus-former-parent-company-safariland-agrees-settle-charges-it.

[114] Axon Enter., Inc. v. FTC, 452 F. Supp. 3d 882 (D. Ariz. 2020), aff'd, 986 F.3d 1173 (9th Cir. 2021).

[115] Axon Enter., Inc.v. FTC,986 F.3d 1174 (9th Cir. 2021), *cert. granted*, 142 U.S. Ct. 895 (Jan. 24, 2022).

[116] *Id.*

Axon and VieVu are likely to become, and the more difficult (and thus unlikely) it would become to unwind the merger if it is found to be illegal. Thus, the remedy might be limited to, for example, fines or conditions on the firm's business conduct.

If the merger is not unwound, Axon is likely to increase its market dominance even further. Proving that a firm is an illegal monopoly is much more difficult than proving that a merger is illegal. A merger violates antitrust law if its "effect *may* be substantially to lessen competition."[117] A monopoly violation under antitrust law, however, requires proof of both "monopoly power"—the *ability* to set prices without regard to competitive pressure—and "monopoly conduct"—*behavior* designed to achieve or protect monopoly power by impeding competition.[118] Both these elements can be satisfied by showing harm to consumers.[119] (As in merger doctrine, both elements focus on consumer welfare.) Being a "monopolist" in the dictionary sense—being the only seller—is not necessary, but neither is it sufficient. In fact, commanding the power to unilaterally set prices is not illegal unless it was obtained or maintained through anticompetitive conduct.[120] Achieving monopoly status and power by legitimately outcompeting one's rivals is perfectly legal. Finally, even if a court finds monopoly power obtained by anticompetitive conduct, it will also consider any procompetitive justifications for the conduct, such as increased efficiency.

Even if Axon is the dominant seller of platforms, it cannot be an illegal monopolist unless platforms constitute a "market" for antitrust purposes. The FTC has argued that a BWC system is a single integrated product. If it is a reasonable option for police departments to satisfy their technology needs from multiple vendors, rather than employ Axon's platform, Axon could argue that its platform is only one product in a competitive market that includes those vendors. Today, there are many companies that offer the individual services that a platform offers: storage, software, hardware, and

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[117] 15 USC § 18 (2022).

[118] *See* Aspen Skiing Co. v. Aspen Highlands Skiing Corp., 472 U.S. 585, 596 (1985).

[119] *Id.*

[120] *Id.* at 596-97.

analysis. Some companies offer combinations of these component services.[121] Axon may have difficulty arguing that its platform must compete against other companies' individual products, because its marketing strategy has been to portray its technology suite, including BWCs and data management, as an integrated product with no real competitors.

Requiring customers to purchase bundled products can be an antitrust violation known as "tying," but a court will consider any efficiency benefits of technological integration and weigh them against any anticompetitive effects.[122] In *United States v. Microsoft Corp.*,[123] the government argued that Microsoft engaged in anticompetitive conduct by using contractual and technological devices to tie its Internet Explorer browser to its market-dominating Windows operating system.[124] For some of these devices, the D.C. Circuit found the anticompetitive effects were outweighed by unrebutted evidence of efficiency benefits.[125] For other devices, the court found violations due to a lack of justification. For example, it held that Microsoft had failed to show that its "commingling of browser and operating system code" had any justification "other than protecting its operating system monopoly."[126]

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[121] *See* Andrew Westrope, *Gunshot Detection Company ShotSpotter Acquires Predictive Policing Software*, Govt. Tech. (Oct. 15, 2018), https://www.govtech.com/biz/Gunshot-Detection-Company-ShotSpotter-Acquires-Predictive-Policing-Software.html.

[122] United States v. Microsoft Corp., 253 F.3d 34, 84 (D.C, Cir. 2001)

[123] *Id.* at 95.

[124] The Microsoft antitrust suit was premised on the dominance of Windows at the time. The court found that Windows gave Microsoft monopoly power in the market for operating systems. Although it had not *obtained* that power through unfair means, the court found that *using* it to quash competition in the browser market constituted monopoly conduct. But by the end of the decade, the Apple OS and iOS, Android and Chrome became major competitors. Similarly, any dominance Axon may gain might be temporary. Temporary dominance, however, is still a problem. Indeed, the *Microsoft* court foresaw that phones and other devices might eventually come to compete with Windows, but held that that day was too far off. In any event, even a temporary monopoly is a bigger social problem with respect to police surveillance than consumer operating systems.

[125] 253 F.3d at 67.

[126] *Id.*

A similar question could arise in the police platform context. Axon touts its products as an integrated system with significant efficiency benefits. It is unclear, however, to what extent such claims refer merely to the convenience of using a single vendor and to what extent they assert superior performance due to technological integration.[127] Insofar as they are the latter, it is unclear how true those claims are, and because the technology is proprietary, the answer is probably inaccessible without legal compulsion, such as in litigation-related discovery.

Regardless of the status of the Axon merger under antitrust law, it raises concerns about the impact of business corporations on democratic institutions. In addition to raising questions about corporate impact on policing, Axon's business practices may be in tension with the democratic principles of government contracting. Before selling VieVu, Safariland had sued Axon based on such a theory. Safariland argued that Axon's practice of giving away hardware violated government-contracting rules by ensnaring police departments into contracts without competitive bidding.[128] In addition, Axon actively encourages potential police customers to avoid competitive bidding procedures by invoking the so-called "sole source" exception.[129] State and federal laws generally require a competitive procurement process but provide exceptions where there is only one source for the required good or service, or where there is no reasonable alternative

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[127] *See* Transcript for Axon Earnings Call, *supra* note 54, at 5 (describing Axon's "integrated bundle" as combining "our hardware devices and cloud services into one monthly recurring payment."; *See also* Jenkins, *supra* note 74; Maggie Overfelt, *Taser-maker Axon is Looking a Lot More Like Apple, Amazon, and so it the Future of Law Enforcement*, CNBC (Dec. 12, 2019), https://www.cnbc.com/2019/12/12/taser-maker-axons-amazon-alexa-exec-is-future-of-law-enforcement.html.

[128] *See* Jenkins, *supra*, note 54.

[129] *4 Reasons Why Agencies Have Opted to Sole Source*, AXON (Mar. 28, 2016), https://www.axon.com/news/4-reasons-why-agencies-have-opted-to-sole-source [hereinafter *4 Reasons*].

source.[130] In such cases, a public agency may award a contract without a competitive process.

Axon touts sole-source contracting as a way of saving "taxpayer money, department resources, and employee time."[131] Axon representatives have reportedly coached local officials by email about how to avoid competitive bidding procedures.[132] Axon's marketing materials claim that its "hardware-software ecosystem for securely managing massive amounts of evidentiary data" meets these conditions because it is the only "full-featured body camera platform that includes digital evidence management . . . at scale."[133] This claim is impossible to evaluate because it is unclear exactly what "full-featured" or "at scale" means. And if the same or similar functionality could be achieved using a set of unintegrated products, it is unclear how to determine whether that would constitute a "reasonable alternative source."

The city of Las Cruces, New Mexico approved an Axon contract in November 2020 that illustrates the lock-in effect and how it can be used to justify sole-source contracting. The city purchased body cameras from Axon in 2014. When state law required the police department to use more cameras, the city awarded Axon another contract on a sole-source basis. The city council justified this move on the ground that Las Cruces was already using Axon cameras and software and Axon is "the sole manufacturer of the AXON Body 3 camera . . . Evidence.com, and Taser."[134] The point seemed to be that switching costs would be high enough to justify granting Axon a no-bid contract, but no figures were cited. Quoting the sole-source requirements of the municipal code, the council asserted that "it is likely that an award to another vendor would result in

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[130] *See Sole Source Procurement*, NAT'L ASS'N OF STATE PROCUREMENT OFF, https://www.naspo.org/SoleSourceProcurement/ (last visited Feb. 5, 2021); 2 C.F.R. § 200.320(c)(2).

[131] *4 Reasons*, *supra* note 123.

[132] Zusha Ellinson & Dan Frosch, *In Body-Camera Push, Taser Schools Cities on No-Bid Deals*, WALL ST. J. (Apr. 19, 2016), https://www.wsj.com/articles/in-body-camera-push-taser-schools-cities-on-no-bid-deals-1461092807.

[133] *4 Reasons*, *supra* note 123.

[134] *City Council Action and Executive Summary*, CITY OF LAS CRUCES 2 (Nov. 16, 2020), http:// lascruces.civicweb.net.

'substantial duplication of cost to the City that is not expected to be recovered through competition' and that it would cause '[u]nacceptable delay in fulfilling the City's requirement[s].'"[135]

When a particular technology has only one provider, it may be of low quality because the technology may still be maturing or the lack of competition may have reduced incentives to improve it. The space industry provides lessons for dealing with the potential dangers of a monopolistic government vendor. To mitigate the monopoly effect in that industry, the FTC obtained assurances, albeit vague and informal ones, from both the DOD and the National Aeronautics and Space Administration (NASA) that they would use their best efforts to facilitate market entry by SpaceX and other competitors. As of 2021, the ULA had achieved a perfect reliability record, while SpaceX has broken the monopoly and Northrop Grumman and Blue Origin appear poised to enter the market as well. Professor William Kovacic, who participated in the 2005 negotiations, attributes this success, in part, to the FTC's influence and NASA and DOD's understanding that fostering competition would be in their best interests. "Over the past fifteen years, NASA has pursued a conscious strategy to encourage entry. . . . NASA also has shown patience in tolerating occasional failures that entrants must experience to gain capability. . . ."[136]

The police platform market has similar barriers to entry, albeit on a smaller scale. The FTC complaint against the Axon-VieVu merger points out that entry "would require substantial, costly upfront investments in creating a new BWC System offering."[137] If Axon successfully leverages its BWC market dominance into dominance in the platform market, competing would entail even greater costs.[138] Furthermore, for the reasons we have identified here, switching costs are significant. There are considerable obstacles for

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[135] *Id.*

[136] William E. Kovacic, *Competition Policy Retrospective: The Formation of the United Launch Alliance and the Ascent of SpaceX*, 27 GEO. MASON L. REV. 863, 897 (2020).

[137] Complaint, *supra* note 38, at *10.

[138] Rich Duprey, *How Big is the Treat Axon Enterprise Faces From Motorola Solutions?* THE MOTLEY FOOL (Feb. 26, 2021), https://www.fool.com/investing/2021/02/26/how-big-is-the-threat-axon-enterprise-faces-from-m/.

companies to offer rival platforms and also for them to convince police customers to switch.

The FTC's approach to competition in the space-technology sector would be much harder to obtain in the police-technology sector, however. The FTC had to deal only with the ULA and two powerful and sophisticated government agencies, NASA and DOD. In the police-technology context, the customers are enormous in number, atomized, weaker in terms of bargaining power, and likely less skilled in analyzing both costs and technology.

B. The Shortcomings of Current Police Technology Regulatory Approaches

Advances in surveillance technology have prompted widespread interest in police regulation and oversight. Public scrutiny has focused on the most visible and highly publicized types of police technology, like facial recognition and predictive policing. The role of private platforms and the possibility of monopolization, however, have received scant attention. This section looks at two of the most prominent approaches to police-technology regulation and explain why they fail to address the concerns raised by this Article. We also make suggestions for policy reform.

1. Technology-Specific Bans

Prohibiting a specific surveillance technology addresses concerns about transparency, auditability, and fairness but does so only with respect to that product.[139] The case of facial recognition technology illustrates the problems with such bans. Police use of facial recognition technology has prompted concerns about privacy and government overreach.[140] Current Fourth Amendment law has offered little in the way of restraint on

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[139] *See* Andrew G. Ferguson, *Facial Recognition and the Fourth Amendment*, 105 MINN. L. REV. 1105, 1198 (2021). ("Whether store, real-time, or through third-party image searches, building a system with the potential to arbitrarily scan and identify individual without individualized suspicion and to discover personal information about their location, interests, or activities should simply be banned by law.").

[140] *Id.* at 1109.

government use of facial recognition in public spaces.[141] As a result, some state and local governments have proposed or adopted bans on the technology. In 2019, the city of San Francisco became the first American city to ban police use of facial recognition.[142] Cities like Portland, Oakland, and Minneapolis followed.[143] California has imposed a three-year moratorium on facial recognition technology use by police departments that ends in 2023.[144]

The private sector has responded to this resistance to facial recognition technology. In June 2019, Axon pledged not to employ facial recognition in its devices even though it had been conducting research and product development in the area.[145] In fact, Axon had acquired two AI startups that focused on object recognition in videos.[146] Axon's voluntary pledge followed the recommendation of its ethics board, which cited concerns about accuracy and bias.[147] In its report, Axon's AI and Policing Technology Ethics Board reached a preliminary conclusion that "under real-world conditions, even state-of-the-art facial recognition technology is simply not sufficiently reliable to ethically justify its use on body-worn cameras."[148] Future adoption of the technology remains a possibility, however. Axon

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[141] *Id.* at 1197.
[142] *Id.* at 1109.
[143] Kashmir Hill, *How One State Managed to Actually Write Rules on Facial Recognition,* N.Y. TIMES (Feb. 27, 2021) https://www.nytimes.com/2021/02/27/technology/Massachusetts-facial-recognition-rules.html; *See also* Tom Simonite, *Portland's Face-Recognition Ban is a New Twist on 'Smart Cities'*, WIRED (Sept. 21, 2020), https://www.wired.com/story/portlands-face-recognition-ban-twist-smart-cities/ (explaining that the Portland ban is unusual because it bans both public and private use of facial recognition).
[144] Bryan Anderson, *New Law Bans California Cops From Using Facial Recognition Tech on Body Cameras*, Sacramento Bee (Oct. 9, 2019), https://www.sacbee.com/news/politics-government/capitol -alert/article235940507.htm
[145] *First Report of the Axon AI & Policing Technology Ethics Board*, AXON 28-32 (2019) available at: https://static1.squarespace.com/static/58a33e881b631bc60d4f8b31/t/5d13d7e1990c4f00014c0aeb/1561581540954/Axon_Ethics_Board_First_Report.pdf [hereinafter *Axon Ethics Report*].
[146] TASER International, Inc, *Taser Makes Two Acquisitions to Create "Axon AI"*, CISION (Feb. 9, 2017), https://www.prnewswire.com/news-releases/taser-makes-two-acquisitions-to-create-axon-ai-300404780.html.
[147] *Axon Ethics Report, supra* note 145, at 28.
[148] *Id.* at 29.

merely accepted the Ethics Board's conclusion for "face matching products on our body cameras at this time."[149]

Whether imposed by local governments or the private sector, technology-specific bans address concerns that have little to do with the potential risks of police platform dominance. Even if banned from using a particular technology, police departments must still rely on some means of aggregating and managing the data they collect from all other sources.

2. Police Procurement Accountability

Like technology-specific bans, regulations concerning the procurement of police-surveillance technologies are important but limited in their ability to address platform dominance. Some local governments have imposed transparency and reporting requirements on the purchase and use of police-surveillance technologies. While procurement is not a traditional focus of police accountability, it has become increasingly important as police maintain customer–vendor relationships with private companies.

Beginning in the 2010s, a few cities established oversight mechanisms for the acquisition and use of police surveillance technologies.[150] These measures included approval by public officials, reporting requirements, and limits on contractual arrangements with vendors, such as nondisclosure agreements.[151] Under some of these local governance schemes, police departments can be barred from acquiring and using a surveillance technology after review of its impacts on the local community.[152]

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[149] Rick Smith, *The Future of Face Matching at Axon and AI Ethics Board Report*, AXON (June 27, 2019), https://www.axon.com/company/news/ai-ethics-board-report.
[150] Catherine Crump, *Surveillance Policy Making By Procurement*, 91 Wash. L. Rev. 1591, 1604-29 (2016) (detailing incidents that led to oversight mechanisms in Seattle and Oakland).
[151] See, Mailyn Fidler, *Local Police Surveillance and the Administrative Fourth Amendment*, 36 SANTA CLARA HIGH TECH. L. J. 481, 545, 551-2 (2020) (summarizing local police surveillance oversight mechanisms in fourteen local governments).
[152] *Id* at 550-51.

For instance, in Oakland, California surveillance technology oversight is shared by the city council and a Privacy Advisory Commission.[153] Any city agency intending to purchase a surveillance tool must notify the Commission and present both a surveillance impact report and proposed use policy.[154] The Commission's recommendations are then sent to the city council for a final decision at a public hearing.[155] While such efforts are promising, one recent report counted just fourteen local governments with such oversight mechanisms.[156]

More importantly, these local government efforts focus largely on the problems of secrecy and transparency. Local ordinances aimed at forcing disclosures about police technology procurement and use say nothing about the potential problems of a dominant platform. Furthermore, in the vast number of cities around the country that lack even these measures, the pressure to adopt more surveillance technologies can be considerable. A small, resource-constrained police department may be delighted to find that it can pilot a year of a platform's new drone service for free—so long as it continues to use the platform.[157]

3. Addressing Platform Monopoly Issues

Policies that mitigate the lock-in and network effects of platform technology could encourage competition in the police technology sector and reduce the chances of monopolization. The example of space-launch services suggests that government procurement policy can foster competition even in the presence of extreme concentration. When local governments solicit bids for police technology products, for example, they should consider requiring the

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[153] *Id.* at 548.

[154] *Id.*

[155] I*d.*

[156] Id. at 545 ("As of August 2020, fourteen local government entities—thirteen cities and one county—have passed laws formalizing administrative control over police use of sophisticated investigative technologies.").

[157] See, e.g., Presentation by Traci Reese, on Axon Officer Safety Plan 7+ to City of Walnut Creek Public Safety Committee July 29, 2020), available at https://www.walnut-creek.org/home/showdocument?id=24929 (noting in proposed Axon contract with police department in Walnut Creek, CA that ". . . Axon Air is discounted 100%").

capacity to share information with competitors' products and platforms.[158] Procurement officials should also view claims of efficiency critically and weigh them against democratic-policing values.[159] Federal lawmakers and regulators should facilitate the development of information-sharing standards[160] and might even require police technology products to enable information-sharing with competitors' products.

Conclusion

Policing today increasingly relies upon surveillance technologies and must integrate enormous amounts of data collected from multiple sources. Thus a technology platform that integrates software, hardware, and storage offers real advantages. This Article, however, identifies a novel and central challenge for democratic policing. When local police departments are customers in a surveillance marketplace, private vendors wield considerable influence over matters of accountability and transparency. These concerns will be compounded if one company comes to dominate the marketplace for a police-surveillance technology platform. Even a lawfully acquired police platform monopoly raises concerns about democratic policing that orthodox antitrust analysis does not address. The most prominent current approaches to regulating police technology also fail to address platform monopoly concerns. The concentration of private control over policing reduces transparency, public control, and accountability in ways that should concern us all.

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[158] HOLLYWOOD & WINKELMAN, *supra* note 19, at 19-20.
[159] Cf. Kovacic, *supra* note 136.
[160] *Id.*