Technology Driven Government Law and Regulation

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Introduction

Firms around the world are going through a digital transformation with the emergence of digital platforms and data driven artificial intelligence as the lynchpin of value creation in the modern firm.[1] This digital transformation offers new opportunities to create, appropriate, and deliver value for firms and the different users of platforms.[2] Early work has quantified the benefits of such data driven decision-making.[3] Issues such as Covid, work from home, digitized currencies and other factors have sped up this digital transformation for even slow moving companies in the economy.[4]

Government has had to respond to this set of transformations through law and regulation across various sectors of the economy and across themes that cut across sectors such as the regulation of big data, privacy, and innovation, among areas. Just as firms are changing their business models and organizational structures to deal with digital transformation, government regulatory responses remain ossified with traditional ways of organization and with dealing with innovation in traditional ways. This essay seeks to reevaluate how government should organize to better address shifting regulatory needs on evaluating the various costs and benefits of digital business models and how government can deliver value to its various consistencies by creating rather than diminishing technological innovation driving the digital economic transformation.

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[1] KARIM R. LAKHANI AND MARCO IANSITI, COMPETING IN THE AGE OF AI: STRATEGY AND LEADERSHIP WHEN ALGORITHMS AND NETWORKS RUN THE WORLD (2020); GEOFFREY G. PARKER, MARSHALL W. VAN ALSTYNE, SANGEET PAUL CHOUDARY, PLATFORM REVOLUTION: HOW NETWORKED MARKETS ARE TRANSFORMING THE ECONOMY AND HOW TO MAKE THEM WORK FOR YOU (2016).

[2] Ron Adner et al., *What Is Different About Digital Strategy? From Quantitative to Qualitative Change*, 4 STRAT SCI. 253 (2019); Michael G. Jacobides et al., *Towards a Theory of Ecosystems*, 39 STRAT. MGMT. J. 2255 (2018); Geoff Parker et al., *Platform Ecosystems: How Developers Invert the Firm*, 41 MGMT. INFO. SYST. Q. 255 (2017).

[3] ERIK BRYNJOLFSSON ET AL., STRENGTH IN NUMBERS: HOW DOES DATA-DRIVEN DECISIONMAKING AFFECT FIRM PERFORMANCE? 1 (Dec. 12, 2011), http://ssrn.com/abstract=1819486 (finding that data analytics leads to a 5-6% improvement in productivity.)

[4] McKinsey, How COVID-19 has pushed companies over the technology tipping point— and transformed business forever, available at https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/how-covid-19-has-pushed-companies-over-the-technology-tipping-point-and-transformed-business-forever.

Government must transform its approach. While some scholars in law have conceptualized when to use increased automation[5] and others warn against it,[6] this addresses only part of the issue. There is both a process-based set of costs and benefits focusing on whether to adopt new technologies to address but also change in institutional structures and mindset. That is, what role should data science driven technology groups play in US government? Should they have similar standing to existing units within various agencies in the administrative state? Should there be separate digital regulators? How might the complex set of relationships with existing legal institutions play out? In some ways, these are very old questions. What is distinct in this setting is that digital transformation impacts every part of government and regulation.

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[5] See e.g., Cary Coglianese & Alicia Lai, *Algorithm v. Algorithm*, 71 DUKE L.J. 1281 (2022) (cautioning to proceed on a case by case basis); David Freeman, et.al, Government by Algorithm: Artificial Intelligence in Federal Administrative Agencies, (2020)https://www.cdn.law.stanford.edu/wp-content/uploads/2020/02/ACUSAI-Report.pdf.

[6] See e.g., Danielle Keats Citron & Frank Pasquale, *The Scored Society: Due Process for Automated Predictions*, 89 WASH. L. REV. 1 (2014); Margaret Hu, *Algorithmic Jim Crow*, 86 FORDHAM L. REV. 633 (2017).

A. Government as Digital Technology Orchestrator

My proposed solution is modest. The problem that it seeks to solve is that many digital platform issues occur across substantive areas of law/regulation which have spillover effects into related areas. There is at present a current lack of coordination, lack of understanding, and slowness of government agencies to think not merely about the substantive issues but also about how to use agency resources to address them strategically. To solve this sort of problem, some authors propose that a technology related meta-agency should be created to provide "oversight, rulemaking, and technical updates for an inevitably digital administrative state."[7]

We need not go this far as to create a new agency with expansive powers.[8] Rather, we just need to treat government like a platform with a data driver ovelay over existing institutions. That is, we need an orchestrator within government to coordinate responses across existing agencies. This would be the creation of a group within the Executive branch with a data science unit within this structure that also would coordinate with specific government agencies on data issues – essentially creating a technology driven overlay to existing managerial structures, much the way that many companies are doing as part of their own digital transformations. This type of external oversight also serves to limit bureaucratic inertia and capture.[9] As such, I propose the creation of a centralized data analytics unit that will coordinate digital responses and leverage knowledge with various regulatory agencies that have overlapping interests.

The issue with different parts of government all using digital tools in different ways and at different speeds is that it makes it difficult for government overall to unluck the value of increased digitization through a more comprehensive data-driven approach across specialist departments and agencies when issues may be similar. Such processes may not work without a change in approach.[10] There is no orchestrator of resources to leverage

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[7] Rory Van Loo *Rise of the Digital Regulator*, 66 DUKE L.J. 1267, 1378 (2017)

[8] *Id.* at 1274 (2017) ("From an institutional perspective, centralized ex ante rulemaking offers the best chance to design a set of truly interdependent administrative, antitrust, consumer protection, commercial, and intellectual property laws."); Oren Bracha & Frank Pasquale, *Federal Search Commission? Access, Fairness, and Accountability in the Law of Search*, 93 CORNELL L. REV. 1149, 1208-09 (2008).

[9] Michael A. Livermore & Richard L. Revesz, *Regulatory Review, Capture, and Agency Inaction*, 101 GEO. L.J. 1337 (2013)

[10] A new article articulates how this works in practice. Vikas A. Aggarwal & Brian Wu, *Organizational Constraints to Adaptation: Intrafirm Asymmetry in the Locus of*

knowledge in one area in government into other areas. This problem is more than just one of limited resources for digitization. To be sure, government overall likely does not have sufficient resources in data collection and analysis. Sufficient resources do help to better target regulatory intervention. However, there also needs to be a change in orientation to make data analysis a more important part of decision-making to optimize enforcement policy.

What needs to change? Government agencies not only do not think about digital transformation, they do not think about data as a more fundamental tool. They also do not have the raw ingredients to make digital transformation happen. Most government agencies take in legal information as documents based on words. These data are often raw and uncoded rather than used as structured data. Without structuring the data, it is difficult for government agencies to utilize the information in various filings and submissions to utilize these data in a more meaningful way that would allow data analytics to unlock additional value from the documents in real time.

We know from the strategy literature that in a business context, solutions to organizational design are contextual rather than universal and so there are differentiated solutions. While we can draw general principles for a government reorganization on technology related issues, this may look different than in areas like the Department of Homeland Security or the Consumer Financial Protection Bureau.[11]

New roles sometimes create conflicts with existing roles and relationships within organizations.   As such, it is important to get organizational design correct.   Studies examine that several aspects of organizational change can mitigate the value creation of organizational redesign. This includes issues such as a lack of clarity as to the goal of the

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Coordination, 26 ORG. SCI. 218, 219 (2015) ("We hypothesize that the nature of an organization's interdependence structures and its associated coordination needs can explain differences in its postshock adaptation performance.").

[11] David A. Hyman & William E. Kovacic, *Why Who Does What Matters: Governmental Design and Agency Performance*, 82 GEO. WASH. L. REV. 1446 (2014).

reorganization,[12] a mismatch between the goal of reorganization and its design,[13] or resistance to change by existing units and employees.[14]

This business literature suggests that a reorganization is not merely a question of data but of approach and mindset. Part of the problem is a sort of path dependence that develops in an organization in thinking about technology. This limits the way of thinking about how to implement change. As Baldwin and Clark suggest, "There is a close and powerful connection between the task structure and the internal organization of an enterprise [where] once established, may be both deep and irreversible, because it is often both tacit and complex."[15]

This approach suggests that resource allocation by additional funding for AI and digital transformation is not sufficient. There needs to be a centralized government department that plays a coordination role across different agencies. That is, there should be greater interdependence across government to maximize the impact of an increased digitization and an optimized approach to technological policy.

To implement such an approach, the federal government would create a core group for data analysis that works on complementary areas within federal agencies to help with their expertise. This unit would function as a complementary asset[16] for other parts of government.

Why a rethink? There are a number of areas in which a centralized data analytics group in government could look across functional united to provide technical assistance and offer a more coordinated response for

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[12] Stephen Heidari-Robinson & Suzanne Heywood, *Getting reorgs right*. HARV. BUS. REV. 84 (November 2016); David A.Nadler & Michael L. Tushman, *The organization of the future: Strategic imperatives and core competencies for the 21st century*, 28 ORG. DYN. 45 (1999).

[13] Richard M. Burton et al, *Return on assets loss from situational and contingency misfits*, 48 MGMT. SCI. 1461 (2002).

[14] Julie Battilana & Tiziana Casciaro, *Overcoming Resistance to Organizational Change: Strong Ties and Affective Cooptation*, 59 MGMT. SCI. 819 (2013); Paula A. Jarzabkowski et al., *Toward a theory of coordinating: Creating coordinating mechanisms in practice*, 23 ORG. SCI. 907 (2012).

[15] CARLISS Y. BALDWIN AND KIM B. CLARK, DESIGN RULES: THE POWER OF MODULARITY 56 (2000).

[16] David J. Teece et al., *Dynamic Capabilities and Strategic Management*, 18 STRAT. MGMT. J. 509, 516-24 (1997); David J. Teece, *Profiting from Technological Innovation: Implications for Integration, Collaboration, Licensing and Public Policy*, 15 RSCH. POL'Y 285, 288–90 (1986).

regulatory problems. Scholars of regulation have observed that there is a lack of effective coordination in situations of shared regulatory oversight.[17]

Some issues cut across different governmental units. Creating a more efficient and conformed design to processes would be to coordinate data analytics efforts by various government agencies for such matters as the optimization of document review process.[18] Many government agencies also use various forensic investigative tools.[19] A data unit would improve coordination of such efforts across such government agencies and develop best practices that could be applied in different specific circumstances.

A centralized data unit has the ability to make other units of government into complementary assets. Complementary asset explains value creation for an organization. In the complementary assets literature, the value creation includes things including regulatory expertise which are critical to accelerating and introducing innovations.[20] At the organizational level, whether a firm or government, the required digital transformation requires specialized rather than generic complementary assets. As I have previously written, "specialized complementary assets are frequently built over long periods and thus are path dependent and often idiosyncratic."[21]

A centralized data analytics unit may provide various cross field predictive models for regulatory purposes. For example, multiple agencies address issues such as health or financial regulation. As such, the centralized data analytics unit for the government could coordinate the use of data analytics to identify behavior that may impact multiple regulators that have some overlap. Relatedly, Yesha Yadav has written that multiple financial

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[17] Jody Freeman & Jim Rossi, *Agency Coordination in Shared Regulatory Space*, 125 HARV. L. REV. 1131, 1134 (2012); Nicholas Bagley & Richard L. Revesz, *Centralized Oversight of the Regulatory State*, 106 COLUM. L. REV. 1260, 1313 (2006).

[18] Przemysław Pałka, *Data Management Law for the 2020s: The Lost Origins and the New Needs*, 68 BUFF. L. REV. 559 (2020).

[19] Victor N. Metallo, *The Impact of Artificial Intelligence on Forensic Accounting and Testimony--Congress Should Amend "The Daubert Rule" to Include a New Standard*, 69 EMORY L. J. ONLINE 2039, 2041 ("forensic accounting research will be impacted by how forensic accountants utilize AI within a legal environment that is constantly changing.")(2020).

[20] Teece, *Dynamic Capabilities* at 522.

[21] Gary Dushnitsky & D. Daniel Sokol, *Mergers, Antitrust, and the Interplay of Entrepreneurial Activity and the Investments That Fund It*, 24 VAND. J. ENT. & TECH. L. 255, 280 (2022).

regulators lack a cohesive coordination function.[22] Data analytics is an area that may create opportunities for multiple financial regulation agencies to better address market manipulation. However, market manipulation is not limited merely to financial regulators. Antitrust also addresses market manipulation through collusion. Increased digitization of government functions would allow antitrust agencies to better apply machine learning tools such as textual analysis to identify tacit or express collusion and possibly to create collusion screens.[23] In yet another area, the regulation of blockchain, a number of different regulatory areas may be impacted such as antitrust,[24] IP,[25] tax,[26] securities, corporate law,[27] derivatives,[28] or anti-corruption/bribery.[29]

The need is significant for coordination. However, some individualized efforts are underway. Where is current use of AI in government heading? Coglianese & Ben-Dor summarize both federal and state level use of AI in government as follows:

> The results of our research lead us to be confident in two overarching conclusions. First, no judicial or administrative body in the United States has yet instituted a system that provides for total decision-making by algorithm, such that a computer makes a fully independent determination (that is, a human "out of the loop" decision). Second, we are aware of

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[22] Yesha Yadav, *The Failed Regulation of U.S. Treasury Markets*, 121 COLUM. L. REV. 1173 (2021).

[23] Justin Johnson & D. Daniel Sokol, *Understanding AI Collusion and Compliance, in* Canbridge Handbook of Compliance (Benjamin van Rooij & D. Daniel Sokol eds., 2021); Salil K. Mehra, *Price Discrimination-Driven Algorithmic Collusion: Platforms for Durable Cartels*, 26 STAN. J.L. BUS. & FIN. 171 (2021).

[24] Samuel N. Weinstein, *Blockchain Neutrality*, 55 GA. L. REV. 499 (2021)

[25] Michael D. Murray, NFT Ownership and Copyrights, available at https://ssrn.com/abstract=4152468. (2022)

[26] Reuven S. Avi-Yonah & Mohanad Salaimi, *A New Framework for Taxing Cryptocurrencies* U of Michigan Public Law Research Paper No. 22-014, available at https://ssrn.com/abstract=4071391. (2022)

[27] J. Travis Laster & Marcel T. Rosner, *Distributed Stock Ledgers and Delaware Law*, 73 BUS. LAW. 319 (2018).

[28] Mark D. Young et al., Bitcoins and the Blockchain: The CFTC Takes Notice of Virtual Currencies, (2016), https://www.skadden.com/insights/publications/2016/01/bitcoins-and-the-blockchain-the-cftc-takes-notice.

[29] Coalition for Integrity, *Using Machine Learning for Anti-Corruption Risk and Compliance* 6 ,available at https://www.coalitionforintegrity.org/wp-content/uploads/2021/04/Using-Machine-Learning-for-Anti-Corruption-Risk-and-Compliance.pdf. (2021)

no court that is currently relying in any way, even on a human-in-the-loop basis, on what we would consider to be machine learning algorithms.[30]

Overall, there is an existing shift to greater use of AI in government[31] but things seem to be at a more nascent stage. Yet, AI in government in merely part of a broader digitization process. Best practices from the OECD[32] and Department of Justice[33] suggest that companies should use all of the data at their disposal for purposes of creating effective compliance programs. However, government does not do a good job with data collection or use across different parts of government or mixing both public and private (commercially available) data and a better coordinated effort can solve this.

Conclusion

Digitization and digital transformation provides a shock for government to reconceptualize how it is organized to better optimize legal and regulatory responses to the use of data analytics to create value. Government is well situated for an organizational transformation that will allow it to better orchestrate coordinated responses where appropriate based on expertise of a dedicated centralized data analytics unit that will work across agencies. This is not to argue that each government agency should not develop its own data analytics expertise. Rather, there is some expertise that can be leveraged across different parts of government. This type of intervention requires a unique group to coordinate a response.

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[30] Cary Coglianese & Lavi M. Ben-Dor, *AI in Adjudication And Administration*, 86 BROOK. L. REV. 791 (2021).

[31] See also David Freeman Engstrom, *The Use of AI in Government Administration*, 19 ANN. REV. L. & SOC. SCI. (forthcoming 2023).

[32] OECD, OECD Due Diligence Guidance for Responsible Business Conduct, available at http://mneguidelines.oecd.org/OECD-Due-Diligence-Guidance-for-Responsible-Business-Conduct.pdf. (2018)

[33] U.S. Department of Justice Criminal Division Evaluation of Corporate Compliance Programs, available at https://www.justice.gov/criminal-fraud/page/file/937501/download. (2020).